Annual Reports PPC 1960

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FISCAL YEAR 1960

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

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COOPERATIVE PLANT PEST CONTROL PROGRAMS

FISCAL YEAR 1960

Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

FOREWORD

Cooperative Plant Pest Control Programs

The Plant Pest Control Division administers 22 programs for the eradication, suppression, or control of insects, plant diseases, and nematodes. In addition, in 1960, surveys were conducted on alfombrilla, beet leafhopper, boll weevil hibernation and survival, hoja blanca and its vector Sogata orizicola, potato psyllid, rhododendron rust, and sweetpotato whitefly. The Division administers the Federal Insecticide, Rodenticide and Fungicide Act and coordinates the work in connection with cooperative economic insect surveys.

The responsibility for plant pest programs is shared by the States and all work is carried out in accordance with State laws. There is cooperation with other governmental agencies as well as with the neighboring countries of Mexico and Canada where pest conditions along the borders are of mutual concern.

Division programs are concerned with (a) incipient infestations of newly-introduced pests; (b) introduced pests that have become somewhat widely dispersed and which may now be eradicated with more modern techniques and less expensive new chemicals; and (c) insects native to this country, such as grasshoppers, which outbreak periodically to cause serious damage. The work required to eradicate or control plant pests falls into three categories: (a) Surveys to determine the location and extent of the problem, (b) eradication and/or control, (c) regulatory action for the protection of uninfested areas from interstate spread.

Insect Detection and Surveys

Special emphasis is placed on the need for prompt insect detection. Modern high speed transportation has increased the risk of pest introduction into this country despite the vigilance and care exercised by the Plant Quarantine Division. The objective of this program is to reduce the interval between discovery and establishment of any pest that may be introduced into this country. Early detection of a plant pest is necessary to an economical and successful eradication program.

Through organized surveys we learn of the scope of pest occurrence which is basic to the control and/or eradication effort. Surveys of general insect conditions made throughout the nation are summarized weekly in the "Cooperative Economic Insect Report" which goes to pest control workers.

Regulatory Operations

To protect uninfested areas, Federal domestic quarantines are invoked to regulate the interstate movement of products and things which may carry plant pests. Parallel State quarantines regulate intrastate movement. Within the continental United States there are nine Federal domestic quarantines relating to insects, two concerning plant diseases, one relating to the soybean cyst nematode and one involving witchweed. The Division cooperates with the States in relation to the quarantines of the golden nematode of potatoes, burrowing nematode, sweetpotato weevil, and the phony peach and peach mosaic diseases.

Control and Eradication

The Division under cooperative Federal-State programs treated an aggregate of over 2,233,000 acres for the eradication, suppression, and control of insects, nematodes, and plant diseases in fiscal year 1960. Of this total, some 1,565,700 acres were treated by aircraft. The application of yearly timely control treatments has kept populations of such pests as the grasshopper and Mormon cricket to practical noneconomic levels throughout most of its range. The treatment programs, some of which are

in support of Federal and parallel State quarantines, have stemmed the spread of pests such as the witchweed, khapra beetle, pink bollworm, hoja blanca, and others which pose serious threats to some of our most valuable crops.

Methods Improvement

Through a Methods Improvement staff, research results are adapted to action programs, and better and less expensive ways of handling the Division's operational problems are developed. Program procedures are modified when necessary to utilize more effective techniques, materials, and equipment. Constant surveillance on performance helps insure the success of cooperative eradication and control programs.

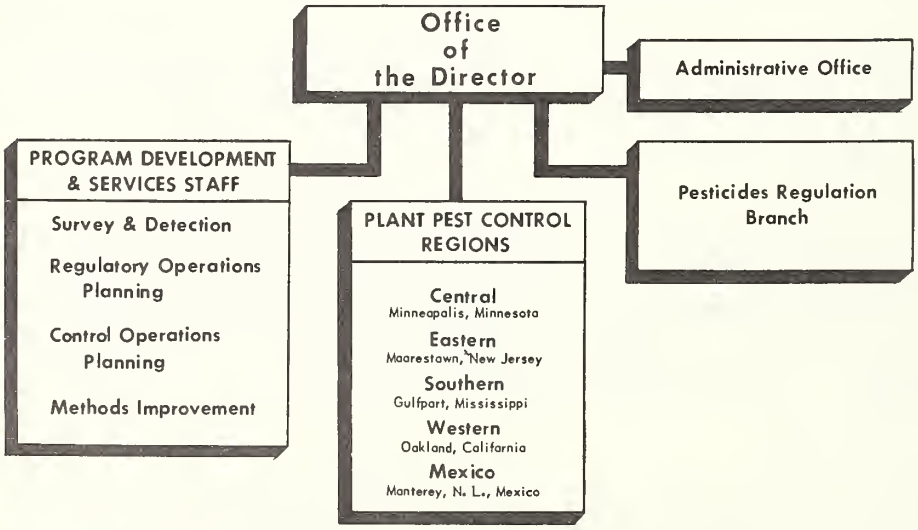
The Federal Insecticide, Fungicide, and Rodenticide Act

The Division's Pesticides Regulation Branch administers the Federal Insecticide, Fungicide, and Rodenticide Act. Through the work of the Branch the public is assured that commercial pesticides are effective for the purposes for which they are sold and that they shall not cause injury to the user or to those who may eat treated crops, as well as to assure uniformity of regulations at the State and Federal levels. This is accomplished by requiring correctness of labeling as a prerequisite of registration and by examining samples and taking legal action when appropriate against shippers whose products are improperly labeled or which are deficient in performance. Close cooperation with States is maintained in carrying out these functions.

Foreign Technical Assistance Programs

The Division is responsible for a cooperative program for the control of migratory locusts and other major insect pests in the Middle East, South Asia, and Africa. Regional Insect Control personnel are presently assigned to Afghanistan, Ethiopia, Iran, Lebanon, Libya, Sudan, Tunisia, and Turkey.

PLANT PEST CONTROL DIVISION



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COOPERATIVE PLANT PEST CONTROL PROGRAMS

Barberry Eradication

Pennsylvania Commissioner of Agriculture, Dr. W. L. Henning (right) and Phil Schroeder, PPC District Supervisor, examine wheat damaged by stem rust that had spread from the barberry bush in the background.

Progress continued in the program to eradicate stem rust-susceptible barberry bushes. During the past year 6,514 square miles were inspected within the 19-State cooperating area, resulting in more than 5 million native barberry and 97,000 common barberry bushes being destroyed. Approximately 4,651 square miles of the total area inspected during the year were placed on maintenance. This leaves a program grand total of 1,019,814 square miles formerly infested which will require only sufficient attention in the future to maintain the barberry-free condition. While some initial work is pending in a few States, the major problem pertains to reinspecting areas totaling approximately 45,045 square miles which are not yet ready for a maintenance type of program.

Work outside of the 19-State eradication area was, for the most part, confined to the inspection of nurseries and plant dealer establishments to make sure that only rust-resistant varieties of barberry and Mahonia moved into commercial channels in order to prevent the possibility of shipment of the rust-susceptible varieties into States where eradication is in progress. During the year 341 nurseries and 63 dealer establishments in 28 States were certified under Quarantine No. 38.

Supporting activity included continuation of grain field inspection in important small grain-growing areas to determine prevalence and severity of stem rust. Representative samples of small grains infected with stem rust were submitted to the Federal Rust Laboratory for charting the races of rust that are attacking the small grain varieties currently being grown.

Burrowing Nematode

As of June 30, 1960, 1,257 citrus groves with 16,736 aggregate acres in the State of Florida were known to be infested with the burrowing nematode. Since the beginning of the program in 1953, the Florida State Plant Board has removed infested trees from 654 groves with 5,280 acres. During the fiscal year, the Plant Board removed infested trees from 44 groves and treated 278 acres. The treatment for the nematode consists of the fumigation of the soil with a nematocide, D-D, at the rate of 600 pounds to the acre.

During the year 2,694 trees were inspected on the margins of previously treated areas; 138 were found to be positive on 26 properties. Negative surveys of areas from which trees were previously removed permitted the release of 600 acres of land to be returned to citrus production. A total of 512 commercial citrus nurseries was surveyed, and

new infestations were found on 39, or 8 percent. In the ornamental and general nursery class, 148 were inspected and new infestations were found on 34 (22 percent). Other miscellaneous properties amounted to 362 inspections, of which 28 (8 percent) were found to be infested.

During the fiscal year a technique was tried which may be a breakthrough in the control of the burrowing nematode. Results so far indicate that short-term but intensive treatments of diseased trees with a relatively nonphytotoxic dosage of nematocide may result in tree recovery from decline. In the meantime, the removal of infested trees in citrus groves by the State is virtually at a standstill pending results of field studies of the in-place nematocide treatment.

Citrus Blackfly

Through cooperation with the Mexican Government, an area south of the Texas border is kept free of citrus blackfly by survey and eradication to protect citrus in this country. South of that line infestations are kept at low levels by biological control. Surveys were continued in this area throughout the year. In northern Sonora and Baja California, where the blackfly has not been found, no infestations were reported this year. One light infestation was found in Mexico 65 miles south of Laredo, Texas, was immediately eradicated. In the municipio of Allende, approximately 130 miles from the Texas-Mexico border, three moderately heavy and extensive infestations were found. Light infestations were discovered in the State of Nuevo Leon and in the vicinity of Hermosillo, Sonora. The latter is approximately 175 miles south of Nogales, Arizona, in the buffer zone of Mexico.

In Mexico, during the fiscal year, 1,139,000 trees were inspected on 22,125 properties. Altogether, 4,859 trees were found infested on 254 properties. In the United States 255,978 trees on 6,208 properties in the State of Texas were inspected with negative results.

The biological control zone in southern Tamaulipas of Mexico was extended northward from Oyam to the Nuevo Leon-Tamaulipas State line on the National Highway toward Monterrey. Blackfly was effectively controlled in this zone during the year. In West Mexico, in the State of Sonora south of Hermosillo, surveys indicate good control by parasites while in some parts of the State of Sinaloa some buildup of citrus blackfly has been reported due to low parasitization.

Through the operation of quarantine stations there was interception of host materials moving from infested to free zones and from biological control zones to buffer zones. Citrus fruit movement to the United States for export was supervised to prevent introduction of infested leaves.

Economic Insect Survey

During fiscal year 1960 more than 1,500 reports on insect conditions were received from clearinghouses of all 50 States. The "Cooperative Economic Insect Report" was mailed weekly to more than 3,200 individuals in the United States and foreign countries. Twenty-seven States cooperated with the Division in financing survey entomologists during the year.

Increased emphasis was placed upon the detection phase of the survey program during the year. The continuing increase in international traffic has proportionately increased the hazard of introducing foreign plant pests into the United States. Eight workshops were conducted in various parts of the country in early 1960 to promote detection, collection, preparation, and identification of insect specimens. In cooperation with the Entomology Research Division, various taxonomists in the United States were contacted and 79 indicated their willingness to assist in the identification problem.

A slide series, a picture story, and a program aid were developed during the year. A motion picture emphasizing detection was initiated and the series "Insects Not Known to Occur in the United States" was continued.

A member of the Surveys and Detection Operations staff was detailed to the Regional Insect Control Project for approximately 2 months to visit seven cooperating countries in the Middle East to discuss development of survey programs and to obtain information on existing insect problems.

European Chafer

Newly-discovered infestations of European chafer in the New York Harbor area at Battery Park, Manhattan, Liberty Island, Governors Island, and the north shore of Staten Island, were all treated with a granular formulation of insecticide during the fall of 1959. In Brooklyn the environs of a parkway through the newly-discovered infestation were treated to prevent spread of the chafer by motor vehicles. Treatment was also applied to an area at Capon Bridge, West Virginia, where a single chafer had been found, and some additional acreage at isolated infestations in upstate New York. Through the efforts of the cooperative Federal-State program to prevent further spread and to eliminate isolated infestations, more than 900 acres were soil-treated. Additional areas are scheduled for treatment in the fall of 1960.

In addition to the new infestations listed above, surveys during the year disclosed slight extensions of the generally infested areas in northern New York. A new infestation was found in Southport, Chemung County, which may be associated with the previously infested sites at Buffalo, Elmira, and Minetto where the application of insecticides has been completed.

This year a limited number of black light traps were used in conjunction with visual scouting around the edges of known infestations. Further improvement in design and and testing of the trap is needed before it is adopted as the principal method of survey for this pest.

The Federal and New York State quarantines were revised to bring under regulation all of Kings County (Brooklyn), five additional towns in Onondaga County, and the town and village of Waterloo, Seneca County. The Federal quarantine revision, effective March 26, 1960, also included Governors Island, New York, a military installation.

Golden Nematode

Since 1941, when the golden nematode was first found on Long Island, New York, surveys have revealed infestation on 14,982 acres. Of this acreage, 8,424 acres have been removed from the infestation pattern by housing developments, leaving 6,458 acres available to agriculture.

During the fiscal year 24,479 acres were surveyed on Long Island, from which 46,363 samples were collected and analyzed. A total of 15 properties containing 644 acres were found infested. Surveys are conducted in all potato-producing areas of the United States on a periodic basis. During fiscal year 1960 potato areas in 16 States were inspected with negative results.

New York State Golden Nematode Quarantine 10 was continued in force throughout the fiscal year. In the spring of 1960, State and Federal agencies concerned with the golden nematode control announced a soil fumigation program designed to eliminate this pest from all known infested land. In addition, the State of New York sponsored a program in which the potato industry with the help of local governments would fumigate

This is one of five tractor applicators used on the golden nematode eradication program on Long Island, New York.

dangerously exposed lands. In June 1960 the field-scale eradication program was inaugurated using the nematocide dichloropropane-dichloropropene at the rate of 90 gallons per acre in two equal applications of 45 gallons each, 10 days apart.

Grasshoppers

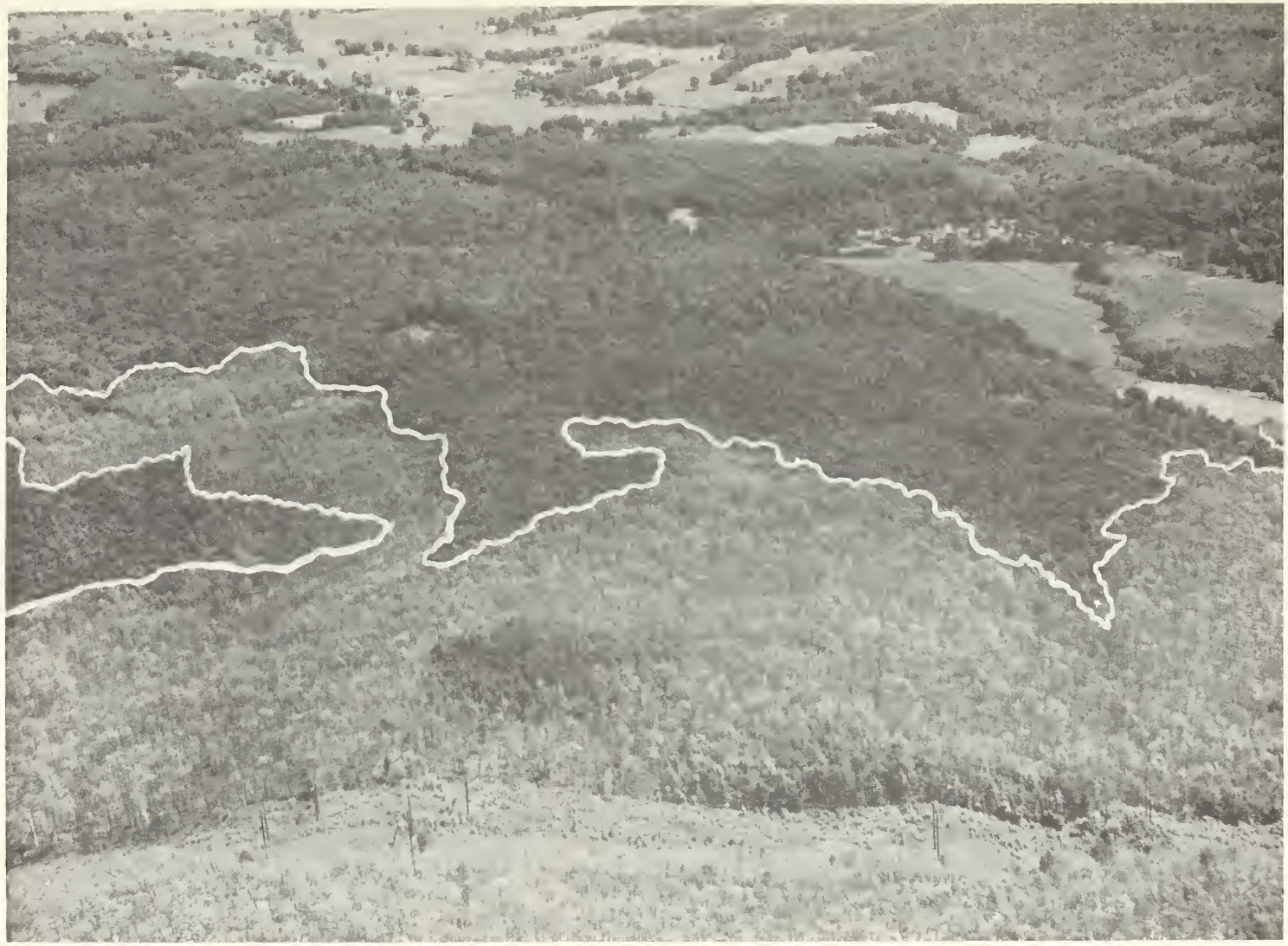
Grasshopper infestations on rangeland in the Midwestern and Western States remained at a low level during the year, continuing the decline which began with the extensive cooperative control program during the 1958 season. The threatening infestations revealed by surveys in the fall of 1959 failed to develop in the spring of 1960, due principally to adverse weather which ranged from severe drought in some areas to an abundance of moisture in others.

Cooperative control programs were limited to small outbreak areas in seven States with an aggregate of 450,544 acres. Sprays containing aldrin, heptachlor, or toxaphene were applied by aircraft or ground equipment. The acreage treated in each of the States involved is as follows: California, 7,243; Montana, 40,034; Nevada, 500; North Dakota, 12,597; South Dakota, 68,397; Utah, 89,104; and Wyoming, 232,669.

Nymphal surveys conducted during the spring revealed severe local infestation of grasshoppers in widely scattered fields in the Conservation Reserve program. These infestations were kept under observation throughout the season in order to evaluate the impact of the infestations on the community and the surrounding range or cultivated land. By midseason, isolated instances of migration were occurring, but in general the grasshoppers were remaining in the Conservation Reserve fields and were not contributing toward communitywide outbreaks. Signs indicating development of threatening infestations of migratory grasshoppers were not evident. However, since there is a period when weedy growth favored by migratory grasshoppers is abundant in the transition of farmland to permanent cover, these fields will be kept under observation in order to determine the economic importance of the populations which may develop in the future.

Gypsy Moth

Area treatment for gypsy moth under the cooperative Federal-State program during the spring of 1960 included work in New York, New Jersey, and Michigan. In New York State two formulations of sevin, a new insecticide of low toxicity to warmblooded animals, fish, and aquatic insects were applied by aircraft on about 8,000 acres in the State. DDT was used on 3,000 acres in locations where residues did not present a problem. In New Jersey, DDT was used in aerial treatment on about 2,500 acres of the only area



Aerial view of gypsy moth defoliation at Oxford, Connecticut, 1960.

Typical concentration of gypsy moth caterpillars in defoliated areas this year. Note defoliation in the background.

of infestation in the State. In Michigan the last remaining portion of the infested area, amounting to 17,500 acres, was also treated by aircraft with DDT. State agencies treated 67,460 acres to suppress populations within the generally-infested area.

Under the Methods Improvement program, 42 test plots totaling 310 acres were treated with five new insecticides using both oil and water diluents in various formulations with and without the addition of stickers.

The gypsy moth is on the buildup in several States. Extensive defoliation of forest areas in 25 townships occurred in 1960 in Connecticut. There was also extensive defoliation in the State of New York in Albany, Rensselaer, Saratoga, and Schenectady Counties and, to a lesser extent, in Clinton, Essex, and Washington Counties, and in scattered locations in the States of Massachusetts, Maine, New Hampshire, and Vermont. Damage to hardwoods caused by this pest during the year was the most severe since 1955.

Articles valued at more than 20 million dollars were certified for movement from regulated areas during the year. This regulatory activity required nearly 20,000 service calls.

A search for an artificial lure or attractant has been intensified and several compounds have now been synthesized that show promise. This development, when perfected, will permit a much more intensive trapping program and a probable new approach to control of this destructive pest.

Hall Scale

Hall scale is believed to have been eradicated from California. There remained, however,in 1960, outlying host plants which had not recently been inspected. To prevent the possibility of an undiscovered infestation from perpetuating this pest, with resultant spread, it was necessary to continue an inspection program in the previously known infested counties during fiscal year 1960. In view of the negative findings for several years, the surveys were greatly reduced in comparison with those required during the height of the eradication program. No new infestations were found as a result of the inspection of outlying host plantings. More intensive inspections were made around and on previously infested properties on which trees had been treated by fumigation or had been removed and burned. There was no indication of a recurrence of the pest.

The same type of survey will be carried on in cooperation with the California Department of Agriculture during fiscal year 1961. If the results are negative it will be rather conclusive evidence that another successful eradication of a destructive introduced plant pest has resulted from efforts of the Department and the cooperating State.

Hoja Blanca

State-Federal cooperative efforts to protect the Nation's rice crop against the threat of hoja blanca disease appear at this time to be effective in all areas. During fiscal year 1960 hoja blanca was found on 42 properties containing 7,519 acres in the State of Louisiana and on one small property of one acre in the State of Mississippi.

During the year multiple applications of insecticide were applied to an aggregate of 32,410 acres to destroy the vector, a plant hopper, Sogata orizicola, and to prevent further spread. A spray mixture of malathion and DDT was used at one-week to ten-day intervals as a control of the vector. In Louisiana, phosdrin was used in treating rice ready for harvest where there was a residue problem.

Intensive vector and disease surveys were conducted during the fiscal year in all of the principal rice-growing areas--Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, and Texas. Altogether, 495,533 acres were inspected.

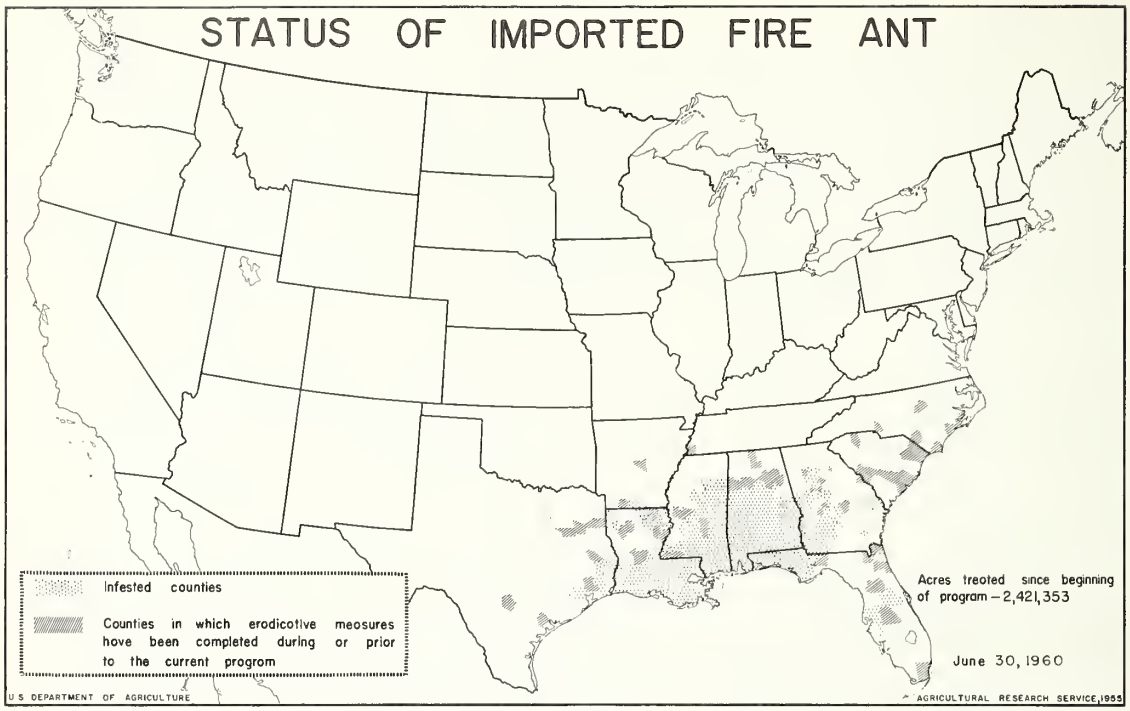
The rice industry and growers are concerned about the disease and are lending their support in an effort to eradicate it or keep it under control.

The Crops Research Division of the Agricultural Research Service has studies underway to obtain basic information about the disease and the vector and to develop resistant varieties. Research has shown that a medium-grain variety, Gulfrose, has resistance to the disease. A few of the less widely-grown varieties are resistant, and can be grown more widely if need be. These are: Colusa, a short-grain variety commercially grown in California, and Asahi, also short-grain; Lacrosse, Missouri R-500, and Arkrose, three medium-grain varieties grown to some extent in the southern area.

Imported Fire Ant

The imported fire ant has been found in 276 counties in nine Southern States. Since the program to eradicate this pest began in 1957, all known infestations have been treated in 67 counties. Eradication programs are underway in 77 of the remaining 210 counties affected. During the year, 895,767 acres were treated with granular formulations of insecticide.

Treatments have been applied to nurseries and other establishments dealing in commodities capable of carrying the imported fire ant which render these commodities



eligible for certification for movement from the infested area. Practically all nursery establishments within the infested area now meet the requirements stipulated in the Imported Fire Ant Quarantine and regulations, permitting interstate shipment.

Surveys are continuing within the known infested States to delimit known infestations and in the adjacent States to detect new infestations. Imported fire ants were found for the first time in 10 counties, 1 in Florida, 5 in Georgia, 2 in Louisiana, and 2 in North Carolina. No infestations were found in States not previously infested.

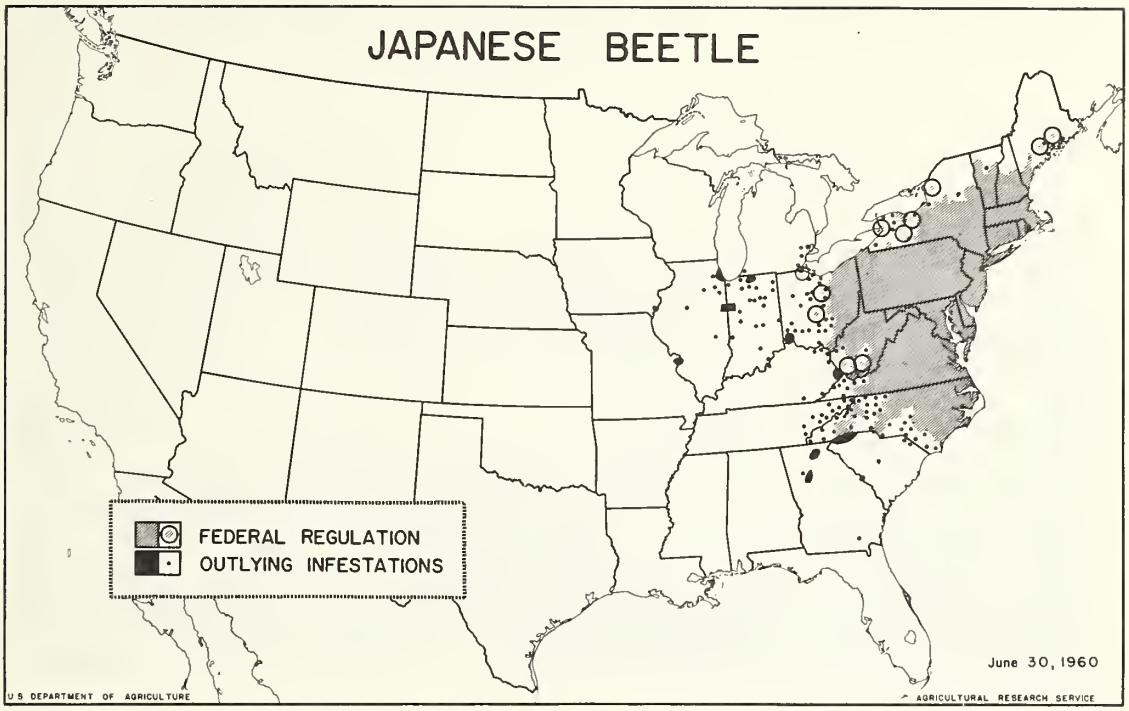
A split-application treatment procedure, consisting of two applications of heptachlor at 1/4 pound per acre spaced 3 to 6 months apart, was introduced in the program this year to minimize the chance of residues on forage and the hazard to wildlife. This procedure was followed on approximately one-third of the total acreage treated this year.

Through the Methods Improvement program many insecticides are being screened and field-tested to find an acceptable alternate insecticide. Tests with baits show promise and will be field-tested on larger areas during the coming year.

Japanese Beetle

New infestations of Japanese beetles were found in 12 States (already known to be infested) amounting to some 530,000 acres. The greatest extensions were 314,000 acres in North Carolina and 109,950 acres in South Carolina. More than 40,000 traps were in operation during the year.

Eradication efforts have continued at points on the western limits of the beetle's spread. Some 82,000 acres were soil-treated for the control of Japanese beetles in in 1960, the majority of which were in outlying infested lands where the work was done



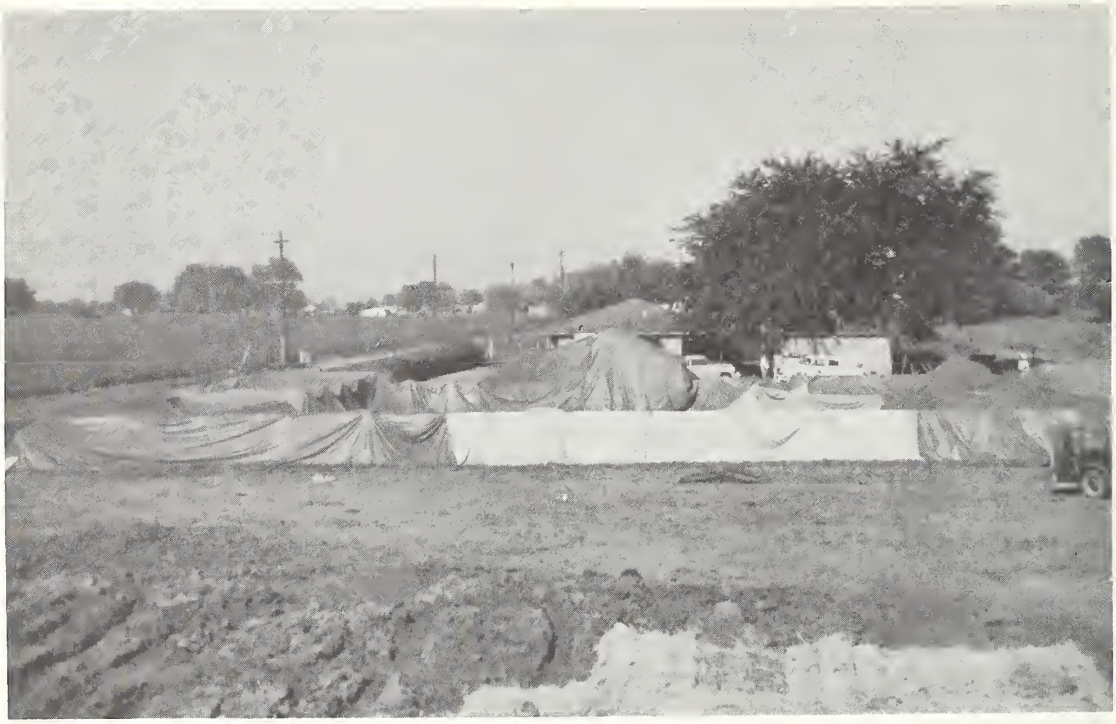
on a Federal-State cooperative basis. Substantial areas of infestation in Illinois, Kentucky, Michigan, Missouri, and Tennessee have received treatment.

Enforcement of regulations pertaining to the summer quarantine on fruits and vegetables was carried out effectively in 1960. Much less trouble was experienced in the movement of green beans from North Carolina into Tennessee than in recent years, due to the operation of new type shakers on the grader equipment.

The appearance of unusual numbers of Japanese beetles at airports at Baltimore and Philadelphia on June 20 prompted the beginning of foliage applications of insecticides to airport environs and the use of DDT aerosol sprays in planes, supplemented by residual sprays in cargo compartments. A total of 4,658 airplanes originating in the regulated area was inspected at destination, and 332 planes, or 7 percent, were found infested. Infestation on planes arriving on the west coast amounted to 13 percent. Jet-propelled planes showed a much higher percentage of infestation than planes with piston engines. Tests disclosed that although beetles arrived alive at destination, they died shortly thereafter as a result of contact with the residual insecticide.

Khapra Beetle

The fumigation of properties infested with khapra beetle is keeping pace with new discoveries. On June 30, 1960, all known infestations of the khapra beetle in the



Small storage and equipment area undergoing fumigation with methyl bromide for khapra beetle eradication.

United States and Mexico had been fumigated. A summary of properties fumigated since the beginning of the program in 1955 through June 30, 1960, is as follows:

State	No. of Properties Fumigated	Volume Fumigated (Cubic Feet)
Arizona	242	60,264,848
California	341	82,092,195
New Mexico	19	1,779,808
Texas	28	1,930,912
Republic of Mexico	87	24,877,491
Total	717	170,945,254

During the year, 46,294 properties were inspected throughout the United States and Mexico. A total of 37 infestations with a storage capacity of 7,018,038 cubic feet were found in the United States; none was found in Mexico this year. Of these new infestations, three had been previously infested. All were promptly placed under regulation and held until fumigation had been completed. Any product permitted to move from these establishments prior to fumigation were treated before leaving the premises.

The number of interceptions at seaports in material moving into the United States increased during the year. In 1960 the khapra beetle was intercepted 131 times, several of the interceptions being at ports along the newly-opened St. Lawrence Seaway.

Added emphasis has been placed on survey, particularly at port facilities along the seaway. Over 3,000 inspections were made in the Central States in storage facilities of the Great Lakes ports.

Mediterranean Fruit Fly

For the second successive year no Mediterranean fruit flies were taken in the 8,000 traps operated in Florida, scene of the reintroduction of the pest in 1956. Trapping results have also been negative in Alabama, Arizona, California, Georgia, Louisiana, Mississippi, South Carolina, and Texas where a smaller number of traps were used. To fully capitalize on this detection program, all the traps were charged with combination baits designed to lure other species of economically important fruit flies.

This pest appears to have become firmly established in Costa Rica with a general infestation, ranging from light to heavy enough to cause economic damage. This has caused considerable concern to citrus and vegetable growers of Florida, Texas, Arizona, and California. The finding of infestation along the Pan-American Highway in Nicaragua indicates that spread northward is occurring. For this reason plans were made to give Mexico assistance in conducting surveys in that country in an effort to determine as promptly as possible its appearance in Mexico. Assurance has been given by the Defensa Agricola of Mexico that prompt action will be taken to eradicate any incipient infestation that may be detected by the surveys.

Mexico has strengthened its quarantine activities at the Mexico City Airport as a means of preventing entry of fruit infested with Mediterranean fruit fly, brought in by airplane from South America or the infested countries of Central America.

Mexican Fruit Fly

The combined efforts of State and Federal agencies and the Republic of Mexico have successfully stopped the Mexican fruit fly at the California border in northwest Mexico, following its last discovery in that State in July of 1957. However, the threat of invasion of the fly is constant. Nevertheless, Arizona has remained uninfested. This successful prevention program emphasizes surveys to detect an incipient infestation. Intensive grove inspections and widespread trap operations are conducted in San Diego County, California. In addition, during the period when flies are trapped in the adjacent area of Mexico, a spray program is carried on in a narrow belt in San Diego County immediately adjacent to Mexico by the State of California and the Division.

Surveys continue to reveal occasional infestations near the border in Mexico but there has been no economic damage. During fiscal year 1960, when five Mexican fruit flies were trapped on five separate dates in Baja California, Mexico, suppressive measures were promptly initiated. Host trees are largely located in home gardens, and it was necessary to make several applications of insecticide to approximately 127,000 trees on some 29,200 properties.

The Lower Rio Grande Valley of Texas becomes reinfested annually by natural migration from native hosts in northeastern Mexico. Operation of traps during the summer periodically over many years indicates the Mexican fruit fly does not survive under the climatic and host conditions present there. Consequently, the program in Texas is primarily enforcement of regulatory measures to prevent spread. The necessary surveys to establish the dates for inauguration of the requirements for fruit certification are conducted each season.

Mormon Cricket

Surveys conducted during the summer of 1959 indicated a total of 27,000 acres in the Rocky Mountain States were lightly infested with Mormon crickets. Most of the infestations in 1959 consisted of crickets in the solitary phase. Nymphal surveys in the spring of 1960 revealed a small area of some 1,200 acres in north-central Oregon where the formation of bands had begun. These bands were treated with the standard Mormon cricket bait consisting of steam-rolled wheat impregnated with an oil solution of aldrin.

For several years intensified surveys have been conducted to locate infestations of Mormon crickets and to keep them under close surveillance. As soon as migratory tendencies develop and bands are formed, treatments are begun to eliminate the infestation. This program has served to confine recent outbreaks to a relatively few acres requiring control each year.

The Mormon cricket has the ability to multiply and reach outbreak proportions in a short time. Historically, infestations originate high in the western mountains. When sufficiently high populations occur, scattered crickets in the solitary phase change to a migratory phase, band together and move to lower elevations. Surveys will be continued to detect any formation of bands. Except for the small area in Oregon, there were no indications that bands were forming or that a buildup was underway in the breeding grounds surveyed this year.

Peach Mosaic Disease

The extent to which peach trees were infected with peach mosaic disease declined again this year to a low of 0.04 percent of the trees inspected. This may be compared with an infective incidence of 2.5 percent in 1952.

Nearly 2½ million peach trees were inspected in 1960 and the 976 infected trees detected were destroyed by the growers. A very light infection persists in Arkansas, two infected trees having been found. Only four infected trees on four properties were reported in Oklahoma. The 2 trees in Arkansas and the 4 trees in Oklahoma, together with the 32 infected trees found in Texas, amount to a total of 38 peach mosaic trees in the Texas-Oklahoma-Arkansas area. With 605,674 trees inspected this constitutes an incidence of only 0.006 percent for the Texas-Oklahoma-Arkansas area. A light infection of three trees on two properties was found for the first time in Montrose County, Colorado. No peach mosaic disease was found in Delta County, Colorado, or Los Angeles County, California, during the year.

Inspections for regulatory purposes were made of all budwood sources and no infection was found.

To determine the probability of infection spreading to the great peach production area in the Sacramento and San Joaquin Valleys of California where one-half of the nation's peaches are grown, a spot type survey to detect the vector was made. From this preliminary survey it does not appear that the mite which spreads the disease is present in that important peach area.

Phony Peach Disease

More than 6-3/4 million peach trees were inspected during the past year in commercial orchards in the Southeastern States and 0.3 percent were found to be infected with phony peach disease. These trees were promptly destroyed by the growers. This incidence of the disease marks a very satisfactory decline from a high figure of 2.5 percent in 1952. While this decline in the disease can be largely credited to the inspection of orchards and removal of infected peach trees, it appears that the

eradication of wild plum, a native host, has added greatly to the success of the program.

Wild plum acts as a symptomless carrier of the disease and serves as a reservoir and source of infection for the inoculation of the leafhopper vectors which in turn carry the disease to peach. The breaking of the chain of transmission of the disease from peach to peach did not appear to give sufficient control of the disease but with the initiation of the wild plum eradication program, the situation has improved to a marked extent. The wild plum eradication is accomplished by treatment with AMS (ammonium sulfamate) or other herbicide.

Surveys for phony peach disease were extended to orchards as far north as Illinois where 31 infected trees were discovered this year and destroyed.

Inspections for regulatory purposes were made in all peach-growing nurseries concerned and no infected nurseries were found.

Pink Bollworm

Infestations of the pink bollworm were lighter throughout the generally infested area in the United States and northern Mexico during the 1959 crop season than those recorded the previous year. Infestations found for the first time last year in several counties in Arkansas and Louisiana were either absent or drastically reduced during the current year. No infestations were found in Missouri. Heavy infestations were present in local areas in El Paso County, Texas, and Dona Ana County, New Mexico.

The last two applications of insecticide applied on the jointly financed cooperative eradication program involving 75,000 acres of cotton of the 1959 crop in central Arizona were completed in July. Subsequent surveys located an additional 1,600 acres with a light infestation which were treated in the fall to suppress populations and prevent further spread.

Gin trash inspections during the ginning season in the fall of 1959 and light trap collections in the spring of 1960 revealed light infestations on the periphery of the 1959 eradication area totaling 5,000 acres in Maricopa, Pima, Pinal, and Santa Cruz Counties. The 1960 program which began on May 17 included these infested fields and all cottonfields adjacent to the infestations as a security zone. By June 30, six of the nine scheduled applications had been completed on the 32,000 acres involved.

The eradication program in the Culiacán, Sinaloa zone, in northern Mexico, where the pink bollworm was found in 1957, continues to look encouraging, and a negative survey this fall will bring this phase of the program to a close.

Grain originating in Texas moving to the Western States and found to be contaminated with cottonseed and other cotton products continued to be a problem during the year. To stop this contamination, shippers were urged to prevent raw cotton products and plant debris from coming in contact with the grain. Inspections were concentrated on railway cars at the point of origin, and contaminated grain or cars were held for fumigation or other approved treatments. Judging by the sizeable reduction in the number of carloads of grain classed as being contaminated on arrival in California, the work done in Texas was very effective.

Pink bollworm-damaged bolls and normal bolls. Note exit holes in carpel walls of damaged bolls.

Wild Cotton

During the year only 22,341 wild cotton seedlings and 1,684 fruiting plants were destroyed in southern Florida. This compares to the destruction of more than one million plants in a single season during the height of this program.

Soybean Cyst Nematode

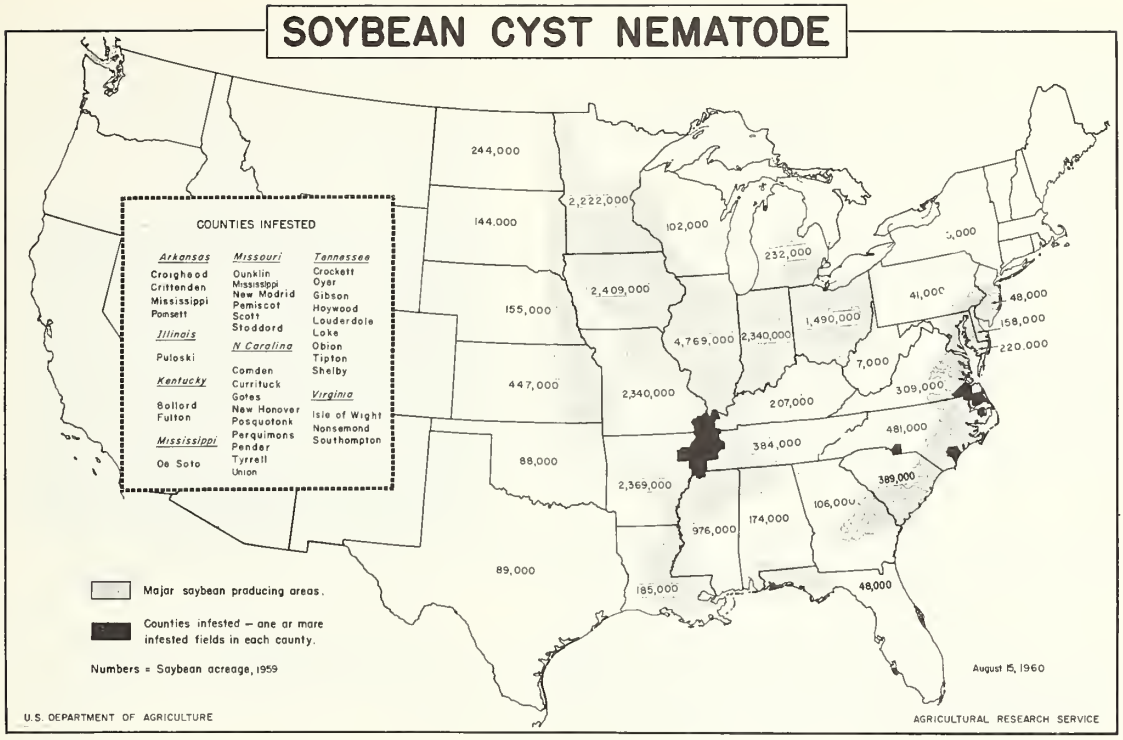
Additional acres infested with soybean cyst nematode were found in six previously infested States and in Illinois in fiscal year 1960. During the year soil surveys were made on some 540,000 acres, supplemented with survey by plant root examinations at certain seasons. Infestations of soybean cyst nematode were confirmed on 14,535 acres as follows:

List of Infested States

State	Acres	State	Acres
Virginia	6,359	Arkansas	1,155
Tennessee	2,887	Kentucky	811
Missouri	1,947	Illinois	20
North Carolina	1,356	Mississippi	0
Total			14,535

In addition to survey in the infested States, soil survey was conducted in 15 noninfested States on some 75,000 acres. The work was centered mostly in the main soybean-producing States and in States located in close proximity to infested areas.

During the fiscal year the States of Virginia and Illinois were placed under Federal quarantine because of the soybean cyst nematode. No important regulatory problem exists in Illinois as the small infested field was treated with a nematocide and planted to grass under the soil bank program. The regulatory problem in Virginia, however, is very complex due to the extensive production of peanuts and the diversity of truck crops grown there. Satisfactory methods of handling these commodities have been developed and are being improved.



Special Surveys

In addition to program surveys and the general cooperative economic survey, the Division is also responsible for conducting several special cooperative surveys to develop information for use by various agricultural groups.

Survey for the potato psyllid, carrier of the virus causing psyllid yellows, in the overwintering areas of the psyllid in Arizona, California, New Mexico, and Texas is conducted to provide vegetable growers in the more northern States with information as to the potential migration of the insect. This survey was conducted in all overwintering areas during March and heavy populations were found in Arizona, California, and in the San Angelo and Del Rio areas of Texas. Light populations were found in New Mexico. Summer potato psyllid surveys were conducted by the States concerned.

Cooperative beet leafhopper surveys, the results of which inform agricultural interests of spring populations and potential infestations, were conducted in southwestern Arizona, southeastern California, eastern Colorado, southwestern Kansas, New Mexico, Nevada, Texas, and southern Utah. In southern Idaho similar surveys were made in order to advise bean and beet growers of potential populations and as a guide to the control measures required on Federal lands to prevent movement of the leafhoppers to nearby croplands. The spring populations of the insect were found to be generally below those of 1959 in all areas.

Division personnel cooperated in making fall hibernation and spring survival surveys for cotton boll weevil in Mississippi and North Carolina and South Carolina. The number of weevils entering hibernation as well as those surviving the winter were higher than those of the fall of 1958 and spring of 1959. This information is used by agricultural agencies to assist in planning their insecticide programs for the forthcoming season.

A cooperative survey to determine whether or not alfombrilla, a plant poisonous to livestock, occurs in the United States, was conducted in June. A 20-mile buffer zone north of the Mexican border in Hidalgo and Luna Counties, New Mexico, and Santa Cruz and Cochise Counties, Arizona, was surveyed with negative results. Adjacent areas in Mexico were surveyed through cooperation with the Mexican Defensa Agricola.

Sweetpotato Weevil

The number of properties infested with sweetpotato weevil in the eradication area during the year was the lowest recorded in recent years. No additional counties were found to be infested for the second consecutive year.

During the year, 83,447 survey and regulatory inspections were made in the coastal States from Texas to South Carolina. Inspections included sweetpotatoes during and following harvest, plant beds, mother rows, volunteer potato plants, storage remnants, and potatoes passing over washing and grading belts. This year 775 properties were found infested and placed under regulation. Negative inspections permitted the release of 592 properties from regulations prescribed by the respective States.

To protect the sweetpotato crop in the seven infested States from attack by the sweetpotato weevil and to aid in the prevention of further spread, growers applied insecticides to 1,279 seedbeds, 12,525 acres of plantings, and 1,698,150 bushels of sweetpotatoes when placed in storage.

The State of Texas, which has not participated in the cooperative Federal-State sweetpotato weevil control and eradication program for the past few years, will resume participation, beginning first with an educational program for the growers concerned.

White-Fringed Beetle

In the eight Southern States infested with white-fringed beetles, some 970,000 acres have been found infested, including 270,585 acres reported during fiscal year 1960. Infestation was found in Arkansas for the first time in St. Francis County. In addition, in the States already known to be infested, beetles were recorded for the first time in two counties in Alabama, six in Georgia, one in North Carolina, and one parish in Louisiana. The newly-infested area in Georgia was quite extensive, amounting to 158,299 acres,which constitutes more than half the total new infested acreage of 1960.

As of June 30, 1960, more than 300,000 acres had received treatment for the white-fringed beetle. During the fiscal year soil treatments were applied to approximately 113,000 acres and foliage treatment to 11,500 acres. All known infestations have been eliminated in 87 of the 211 counties known to have been infested. Treatment of all infestations in South Carolina has been completed. The small infestation in St. Francis County, Arkansas, was treated in its entirety together with a suitable security zone.

Soil treatments have continued at nurseries and soil surface treatments at railroad yards, loading points, and at industrial sites in line with accepted regulatory procedures.

No white-fringed beetles were found at the previously infested area in New Jersey. This infestation was found six years ago and treatment was begun the following year. The area has been free of white-fringed beetles for three years and it is believed that eradication has been accomplished.

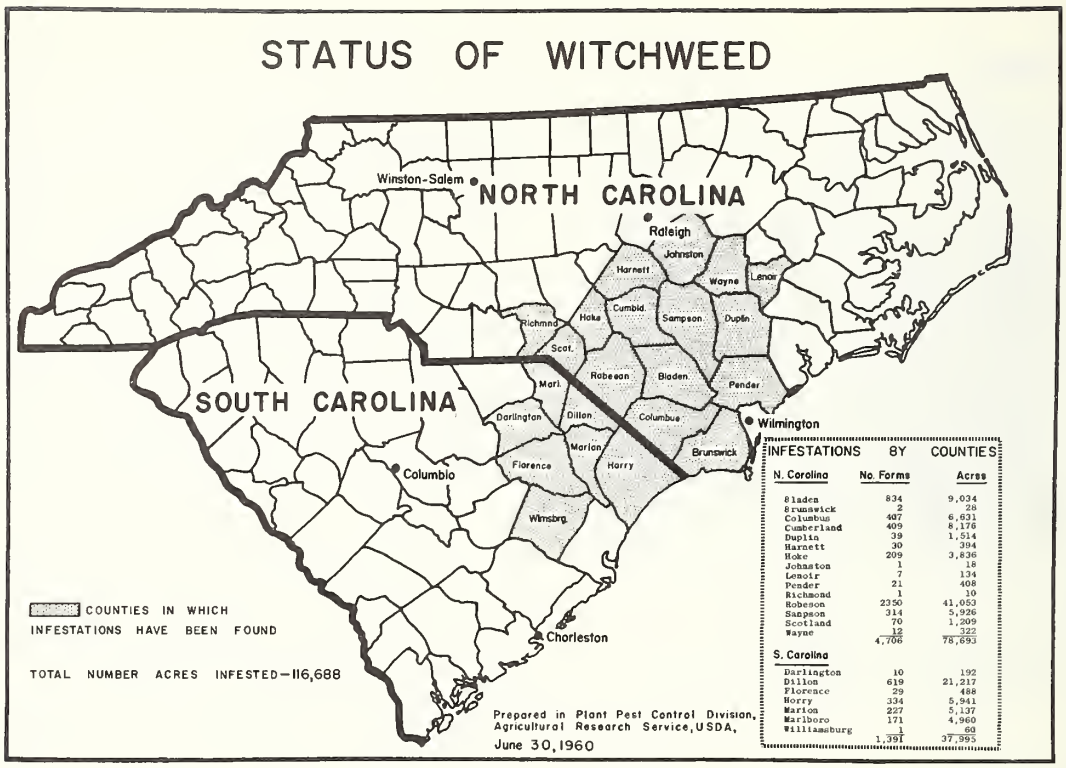
Witchweed

Corn showing wilting and stunting caused by witchweed parasitization. The plants do not recover even in the presence of abundant moisture.

As of June 30, 1960, witchweed was known to occur on 116,880 acres, involving 6,097 properties in the States of North Carolina and South Carolina. The eradication program which was conducted during the year included both chemical and cultural methods. During the year treatments were made on all known infested land. The herbicide 2,4-D was applied at timely intervals to destroy witchweed plants before production of seed. In the spring of 1960 some 5,000 acres were treated on a field test basis with a new preplanting herbicide, fenac, which as a result of research studies showed promise of being an excellent eradication tool. Cultural control measures were applied to 12,500 acres.

A Federal quarantine, effective September 6, 1957, regulates the movement from the infested area of all crops and commodities known to be a hazard in the spread of the pest. As of June 30, 1960, all or parts of 15 southwestern counties in North Carolina and 7 counties in adjoining South Carolina were under regulation. Regulated articles include soil, nursery stock, bulbs, root crops, hay and plant litter, seed cotton, tobacco, peanuts in shells, ear corn, soybeans, small grains, used farm and construction equipment,and used farm products containers. Sanitation practices are rigidly enforced to prevent spread of the pest by various activities, including farm to market movement of agricultural products.

The Crops Research Division and the Plant Pest Control Division of ARS continued their cooperation during the year with scientists of North Carolina and South Carolina on a combined research and methods improvement line of investigations designed to advance our knowledge of witchweed and to develop improved procedures to bring about its eventual eradication. Particular emphasis was placed on investigations to find chemical compounds that would be effective as preplanting and pre-emergence herbicides and to find chemicals which would cause witchweed to germinate in the absence of susceptible hosts.



INFESTATIONS BY COUNTIES

N. Carolina	No. Forms	Acres
Bladen	834	9,034
Brunswick	2	28
Columbus	407	6,631
Cumberland	409	8,176
Duplin	39	1,514
Harnett	30	394
Hoke	209	3,836
Johnston	1	18
Lenoir	7	134
Pender	21	408
Richmond	1	10
Robeson	2350	41,053
Sampson	314	5,926
Scotland	70	1,209
Wayne	12	322
	4,706	78,693
S. Carolina		
Darlington	10	192
Dillon	619	21,217
Florence	29	488
Horry	334	5,941
Marion	227	5,137
Marlboro	171	4,960
Williamsburg	1	60
	1,391	37,995

FOREIGN TECHNICAL ASSISTANCE PROGRAMS

Regional Insect Control Project

The Plant Pest Control Division assists the International Cooperation Administration and the governments of certain underdeveloped countries in the development of practical insect control programs. The objectives of the foreign technical assistance programs are: (1) To assist the United States Operations Missions in their efforts to aid the governments of cooperating countries in the development and direction of practical control programs against major insect pests; (2) to maintain facilities and services for a coordinated locust control program in the Near East, Africa, and South Asian countries; (3) to train nationals in aerial application of pesticides; and (4) to assist in the development and organization of plant quarantine programs.

Programs are currently in operation in Turkey, Iran, Ethiopia, Sudan, Libya, Tunisia, Lebanon, and Afghanistan.

During the year locust control continued to receive major attention and increased emphasis on general pest control was extended to the African area. Assistance was provided in the fumigation of 2,500 tons of grain sorghum upon arrival in Djibouti, French Somaliland, with destination to Ethiopia. Aerial application of 2,4-D for water hyacinth control was conducted on a demonstrational basis to an area equivalent to 1,200 acres of the Nile River 30 miles south of Khartoum, Sudan. The water hyacinth menace to transportation and other activities on the Nile constitutes a serious problem to Sudanese agriculture.

Project representation at Food and Agriculture Organization and Central Treaty Organization meetings gave important assistance to operational aspects of the U. N. Special Fund Desert Locust Project and to plant quarantine activities, respectively, throughout countries where these organizations are active.

The successful establishment of the black scale parasite Metaphycus helvolus in Iran through cooperative project efforts has encouraged work on biological control in that country.

A special appraisal was made of plant pest survey activities during the spring of 1960. Considerable success was met in all countries toward developing interest in the establishment of cooperative insect survey systems and means of coordinating survey activities between countries. Increased emphasis will be placed on this phase of assistance.

FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT AS AMENDED

Economic poisons subject to the above Act must be accurately labeled and perform efficiently and safely when directions are followed before they may be legally distributed in interstate commerce. To determine these facts, labeling and supporting evidence of effectiveness and safety for each product must be accepted by the Division as part of its registration program. The Division also conducts an enforcement program under which interstate shipments of these products are sampled to determine that they are registered, are analyzed chemically to confirm their composition, and tested biologically to ascertain their effectiveness and safety.

In fiscal year 1960, 4,694 new products were registered, 4,629 amended labels and 3,259 distributors' brands accepted, and 3,198 labels reviewed and found unacceptable, making a total of 15,780 registration actions during the year. A total of 86 experimental permits were issued and 1,935 previous registrations were canceled.

Division investigators collected 1,420 samples, of which 269 were found to be in violation and to warrant 36 seizures and 233 notices of violation; 121 additional minor violations were corrected by correspondence. A total of 362 products offered for import were sampled and reviewed. Of these, 128 were suspected and when tested resulted in the detention of 19 shipments due to nonregistration or other violations.

The review of petitions for tolerances and exemptions under Public Law 518 increased by more than 33 percent during the year, due primarily to the inclusion of nematocides, plant regulators, defoliants, and desiccants under the Act by the enactment of the Nematocide, Plant Regulatory, Defoliant and Desiccant Amendment to the Federal Insecticide, Fungicide, and Rodenticide Act, Public Law 86-139.

On March 5, 1960, in response to numerous requests, the Department announced a policy under which the enforcement provisions of the Act were extended to March 5, 1961, with respect to those pesticides subject to the jurisdiction of Public Law 86-139 which were nonresidue-forming, or which, if residue-forming, were granted similar extensions under pertinent provisions of the Federal Food, Drug, and Cosmetic Act.

PROGRAM AIDS

The following informational and pictorial materials on plant pest control programs are available to interested individuals and agencies.

This material may be obtained by direct request to the Plant Pest Control Division, Agricultural Research Service, U. S. Department of Agriculture, Washington 25, D. C.

Motion picture films - Barberry eradication, grasshopper control, gypsy moth, imported fire ant, insect detection, Japanese beetle, and khapra beetle (available for loan).

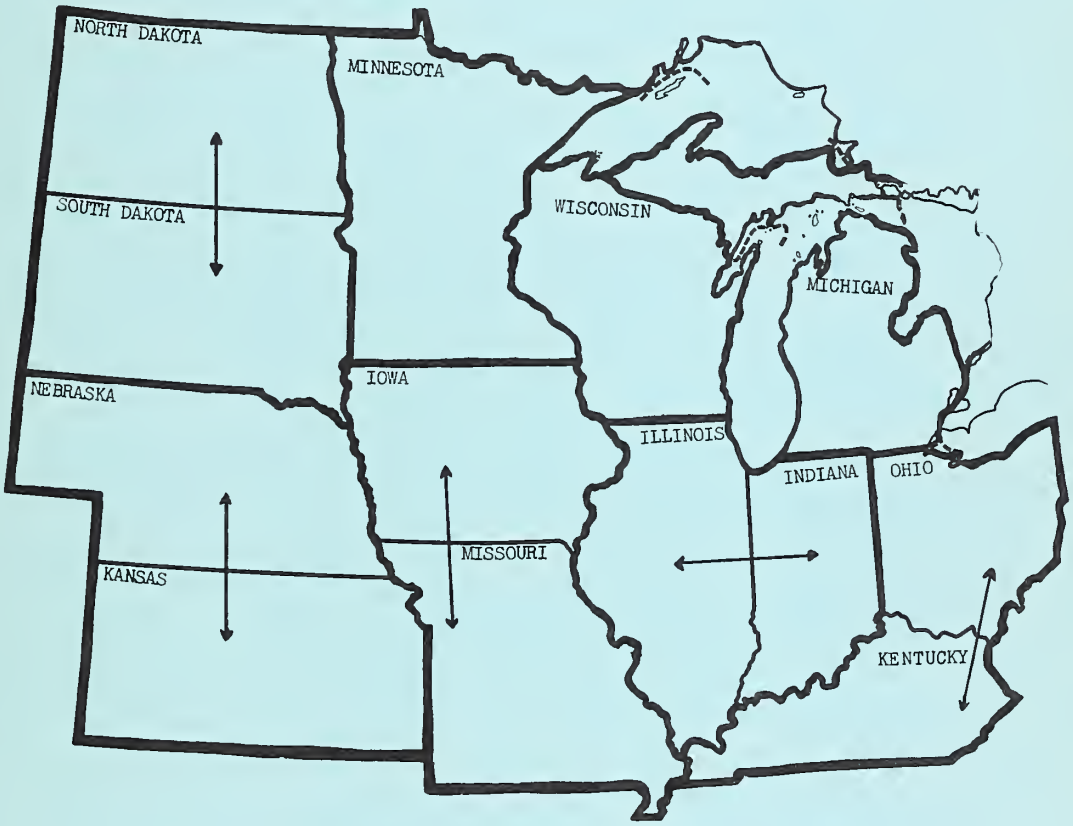
2" x 2" colored slides - For all programs (available for loan).

Exhibits - European chafer, golden nematode, gypsy moth, insect survey, Japanese beetle, khapra beetle, and witchweed (may be scheduled for fairs and other shows).

Publications - Bulletins, pamphlets, and circulars giving details of each pest involved in Division programs.

(★---★)

COOPERATIVE PROGRAMS
PLANT PEST CONTROL DIVISION
CENTRAL REGION



FISCAL YEAR 1960

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

TABLE OF CONTENTS

INTRODUCTION

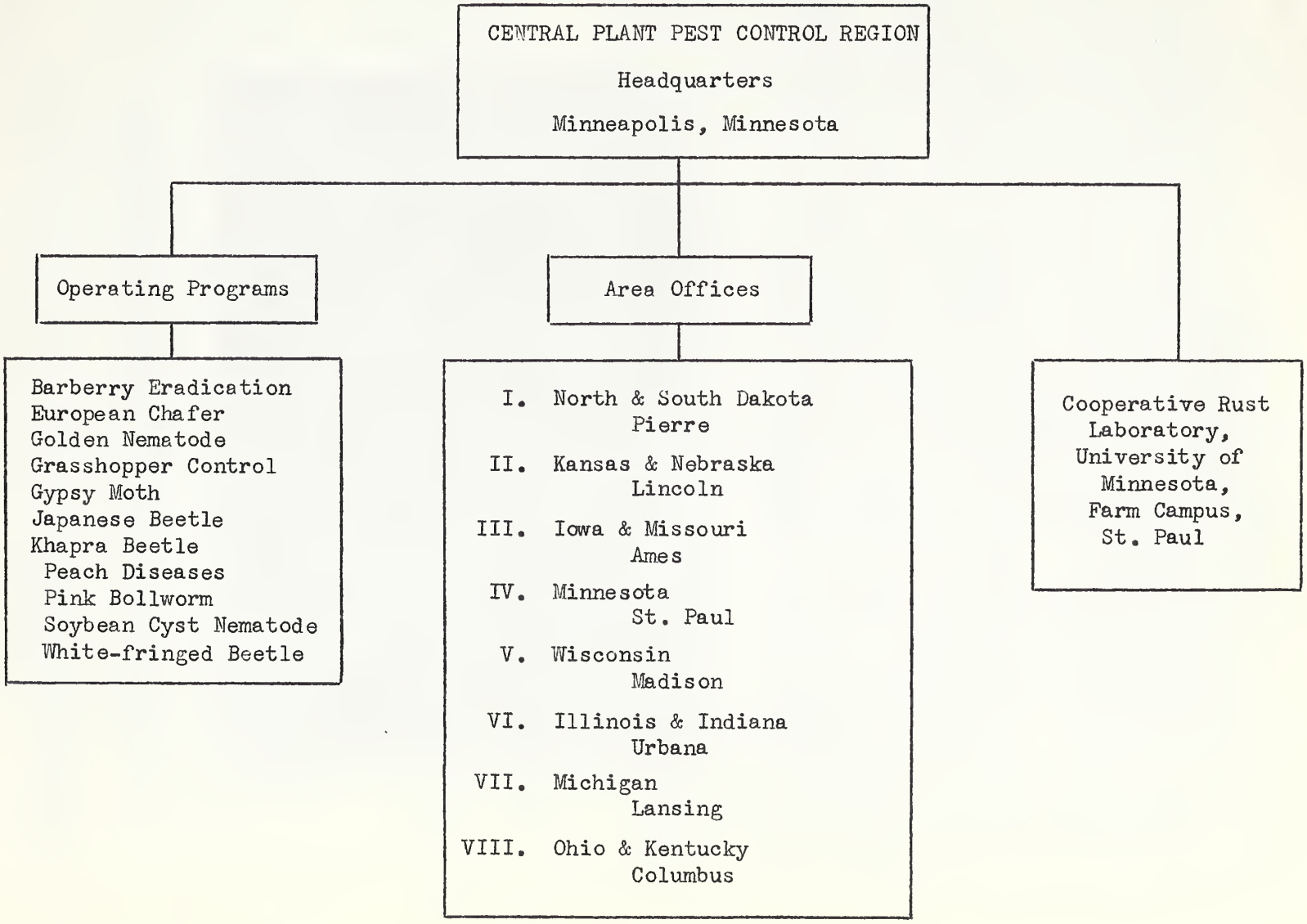
This report includes the highlights of the Division's cooperative plant pest control programs in the Central Region during the fiscal year 1960. Eight area supervisors plan, coordinate, and direct the various programs in their respective areas after consultation with State cooperators. The over-all administration and direction of these cooperative programs in the Central Region is the responsibility of the Regional Supervisor, Minneapolis, Minnesota.

Appropriate agricultural agencies in the State are active participants in all the operating programs. The State Departments of Agriculture and/or Conservation provide funds for program activities. In addition, seasonal employees are assigned as needed to the various programs. The State Extension Services, including county agricultural agents, assist in program operations by disseminating publicity through their informational facilities. They also actively assist in organizing special operational programs in their counties.

Experiment Stations provide invaluable technical assistance through their research activities. Station personnel in some programs--particularly the Japanese beetle, soybean cyst, and pink bollworm--actively participate in the various program activities.

The Crop Quality Council actively cooperates in many of the Division's programs. Personnel of this organization make stem-rust collections for race determination by the Cooperative Rust Laboratory. They provide reports of the prevalence and severity of stem rust and estimate losses based on actual field observations throughout the principal grain-producing areas of the country. Reports are also made of crop development and crop pests other than the stem-rust disease. The Council actively supports legislation on both Federal and State levels for all the Division's program activities.

The following pages include a brief summary of the program activities for the 1960 fiscal year.


CENTRAL PLANT PEST CONTROL REGION
Headquarters
Minneapolis, Minnesota
Operating Programs
Barberry Eradication
European Chafer
Golden Nematode
Grasshopper Control
Gypsy Moth
Japanese Beetle
Khapra Beetle
Peach Diseases
Pink Bollworm
Soybean Cyst Nematode
White-fringed Beetle
Area Offices
I. North & South Dakota
Pierre
II. Kansas & Nebraska
Lincoln
III. Iowa & Missouri
Ames
IV. Minnesota
St. Paul
V. Wisconsin
Madison
VI. Illinois & Indiana
Urbana
VII. Michigan
Lansing
VIII. Ohio & Kentucky
Columbus
Cooperative Rust Laboratory, University of Minnesota, Farm Campus, St. Paul

BARBERRY ERADICATION

During the year, satisfactory progress was made in the 12 States in the Central Region actively engaged in the eradication of rust-susceptible barberries for the control of stem rust. A total of 10,186 barberries was destroyed on 177 new and 638 previously infested properties. This year approximately 4,115 square miles of the 676,533 initially scheduled for inspection were placed on maintenance. There remain only 33,693 square miles that will require resurveys to maintain the current barberry-free condition. Initial inspections of approximately 18,500 square miles in Kansas and 310 square miles in Missouri, Indiana, Iowa, and Michigan are the only areas requiring this type of survey in the Central Region. A number of areas in Illinois, Iowa, Michigan, Minnesota, Ohio, and Wisconsin will constitute a control problem for some years to come, because of the high bush potential in original heavy infestations. In the Central Region, 192 nurseries and 34 dealers engaged in growing and shipping barberry and mahonia stock interstate were inspected during the year.

Field men cutting barberry canes preparatory to eradication with Ammate. Twenty-six escapes were destroyed on this property in Jennings, Kansas.

Stem Rust in 1959

Damage to spring wheat in the calendar year 1959 was negligible. Damage to winter wheat was light in the aggregate, although it exceeded that of the previous year in certain areas. A regional epidemic centered in southeastern Nebraska resulted in a loss of 5.4 percent in Nebraska, 1.5 in Missouri, and 1 percent in Iowa. Damage of 1 percent also occurred in Virginia, West Virginia, and Michigan. Loss in barley was negligible, and oats were not injured by stem rust except in barberry areas of the Virginias.

Rust inoculum was small in quantity because of unfavorable weather in south Texas during the winter of 1958-59 and in other parts of the State during the spring. Drought then kept inoculum low in much of both winter- and spring-wheat areas northward.

Slide exposures indicated that spore showers were mostly light. Spores increased to moderate numbers at some southern stations during the second half of May, with a maximum of 90,000 per square foot in north-central Texas on May 16. Wind movement northward, however, was not important until late May. During June, spores increased in number at Nebraska stations, with a maximum of 437,000 per square foot on June 26, by which time rust severity in some fields in eastern Nebraska was 70 or 80 percent. At spring-wheat stations, however, spores remained relatively small in number until later in the season, when increased inoculum was reflected by an abundance of stem rust on wild barley in localities with sufficient moisture.

Wheat stem-rust races - Twenty-three races and subraces of wheat stem rust were identified among 700 uredial isolates. Race 56 comprised 32 percent of the isolates; the 17-29 race group, 22 percent; 15B, 16 percent; race 11, 10 percent; and 38 and 48A, 6 percent each. Compared with the calendar year 1958, there was a slight increase in race 56, an appreciable increase in the 17-29 group, and a slight decrease in 15B.

Race 15B was scarce in Texas, outside of plots at College Station, and was not collected in Oklahoma, Kansas, or Missouri. In the spring-wheat States of Minnesota, North Dakota, and South Dakota, 15B comprised 33 percent of the isolates, most of which came from durums. Although a new and virulent culture of 15B was isolated from heavily rusted Selkirk wheat in the Texas plots, the potential threat of this isolate to Selkirk in the spring-wheat area did not materialize. Nevertheless, it constitutes a warning for the future.

The 17-29 group of races, which can attack Kenya derivatives, comprised only 7 percent of the isolates in the spring-wheat States

but was more prevalent than other races in most of the area east of the Mississippi River. Race 11 continued to be common in the Pacific Northwest.

Fourteen races and subraces of wheat stem rust were isolated from aecial collections on barberry, among which races 11, 56, 29, and 15B were most common.

Oat stem-rust races - Eleven races and subraces of oat stem rust were identified among 230 uredial isolates. Race 7 (combined with the closely related race 12) comprised 58 percent of the isolates; 7A, 10 percent; race 8 (with 10), 11 percent; race 6 (with 13), 11 percent; and 2 (with 5), 7 percent. This is a decrease from the previous year in races 8 and 2, and an increase in 7A and 6. The virulent races 6, 13, and 13A were more widely distributed than formerly. Race 6, which was found only occasionally during the preceding 10 years outside of northeastern United States, became more prevalent this year in the north-central oat-producing area. Race 13 was found for the first time outside of northeastern States when it was collected in North Dakota. Subrace 13A, to which all commercial oat varieties are susceptible, was found in New York and once in Michigan. Subrace 4A, also a threat to commercial oats, was found in the United States for the first time. Both of these subraces were obtained only from barberry areas.

Barberry Susceptibility Tests

In 1959, 10 barberry species and varieties were tested for susceptibility to stem rust. At the end of the year, 5 had been determined as resistant, 1 as susceptible, and 4 as requiring further tests. Of the 5 resistant barberries, 4 were varieties or selections of *Berberis thunbergi*--the Japanese barberry.

Thirty other barberries included in the tests have been previously determined as resistant. They remained so under further testing with varieties of stem rust other than those used previously or rust collections from other areas.

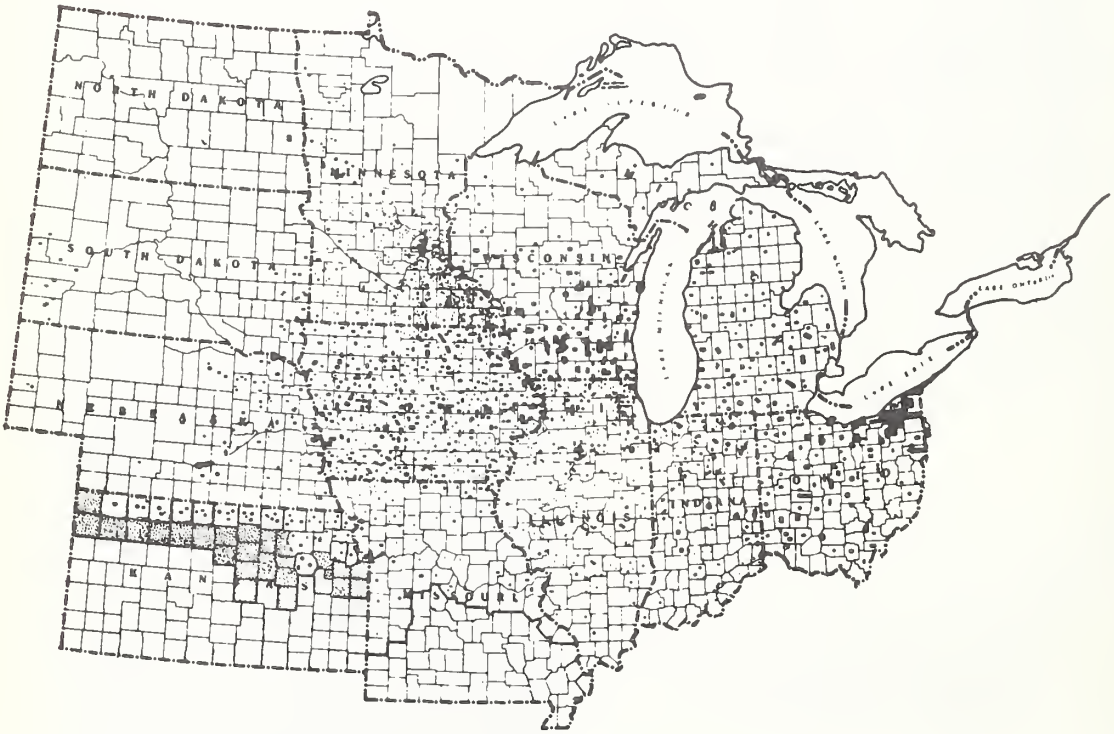
Barberry Eradication Accomplishments, Fiscal Year 1960

State	Square Miles Surveyed	No. of Hosts Examined	Properties Inspected	Nurseries Inspected	Plants Destroyed
Illinois	11	111	9	37	111
Indiana	15	5	1	11	5
Iowa	662	973	95	9	973
Kansas	3,097	358	24	10	358
Michigan	339	4,551	347	29	4,551
Minnesota	238	910	51	41	910
Missouri	20	52	5	14	52
Nebraska	57	84	6	2	84
N. Dakota	0	0	0	1	0
Ohio	160	1,108	70	62	1,108
S. Dakota	21	8	6	1	8
Wisconsin	390	2,026	201	9	2,026
Totals	5,010	10,186	815	226	10,186

Large planted barberry found on a new property in Omaha, Nebraska.

BARBERRY ERADICATION
CENTRAL REGION

STATUS JULY 1, 1960



Area requiring intensive work	14,302	square miles
Ares requiring farmstead work	19,391	square miles
Area on maintenance	642,840	square miles

PRESENT STATUS, PROGRESS, AND FUTURE REQUIREMENTS, 1918-1960

State	Square Miles										Properties			Barberry Bushes Destroyed		
	Total in State to be Worked	Number Covered				Number Requiring Work One or More Times				No. Requiring No Future Work	Total Found to Date	No. Needing One or More Reinspections	Number Completed	Common	Native	Total to Date
		Initial Work		Rework		Farmstead		Intensive								
		Farmstead	Intensive	Farmstead	Intensive	Initial	Rework	Initial	Rework							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Illinois	56,043	56,043	34,679	4,659	7,758	0	0	0	725	55,318	20,054	2,852	17,202	2,660,350	89,781	2,750,131
Indiana	36,045	36,045	27,329	8,405	3,487	0	299	14	222	35,510	7,012	768	6,244	200,065	212,118	412,183
Iowa	56,167	56,167	44,526	4,498	11,697	0	495	255	4,139	51,278	15,856	4,781	11,075	1,323,937	125	1,324,062
Kansas	32,800	14,203	0	0	0	18,597	0	0	274	13,929	282	282	0	2,868	1	2,869
Michigan	57,481	57,481	26,637	17,096	10,937	0	0	9	1,263	56,209	19,283	4,779	14,504	6,735,633	16	6,735,649
Minnesota	80,883	80,883	32,958	28,742	8,099	0	0	0	1,217	79,666	9,350	2,318	7,032	1,014,792	0	1,014,792
Missouri	37,203	19,724*	17,656*	789	946	0	0	32	196	36,975	1,922	675	1,247	24,615	0	24,615
Nebraska	77,268	77,268	36,832	34,966	7,306	0	0	0	490	76,778	4,949	228	4,721	149,155	0	149,155
North Dakota	70,183	70,183	1,276	30,105	417	0	0	0	21	70,162	1,084	12	1,072	39,562	0	39,562
Ohio	40,740	40,740	32,197	6,289	12,180	0	0	0	2,410	38,330	17,677	2,811	14,866	3,798,663	0	3,798,663
South Dakota	76,868	76,868	12,906	4,527	1,529	0	0	0	208	76,660	1,574	87	1,487	136,490	0	136,490
Wisconsin	54,852	54,852	21,314	23,886	11,268	0	0	0	2,827	52,025	18,056	5,879	12,177	5,721,253	0	5,721,253
Totals	676,533	640,457	288,310	163,962	75,624	18,597	794	310	13,992	642,840	117,099	25,472	91,627	21,807,383	302,041	22,109,424

*13 square miles of initial work last year reported in column 3 have been transferred to column 4 of the 1960 report.

EUROPEAN CHAFER

The European chafer has not been found to date in the Central Region. Several years ago stock from a nursery in New York was shipped to one or more localities in Indiana, Michigan, Minnesota, and Ohio. This nursery was in an area which was suspected of having a chafer infestation.

Since then visual scouting has been carried on in the various localities in the four States, but no beetles have been observed. In 1959 ten black-light traps were used in the survey program. It has been found that the chafer is readily attracted by the black light and is captured by falling through a funnel into a container. These traps will catch specimens from light infestations that are not readily observed by visual surveys. No chafers were captured in these traps.

During the 1960 season the ten traps were again in operation in several localities in the above-mentioned States. In addition, visual surveys were made during the period that adult beetles would, if present, normally be flying about favorable habitats.

GOLDEN NEMATODE

The golden nematode has not been found in the Central Region. Since its discovery on Long Island, New York, periodic surveys have been made in all our potato-producing areas of the Region. Soil samples have been taken from potato fields or at grading sites once every five years. The number of samples collected and examined since the survey was started in the Central Region totals approximately 46,617.

Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, and Ohio were surveyed in 1958. Kentucky was the only State surveyed in 1959. States scheduled for survey in 1960 are Michigan, Minnesota, North Dakota, and South Dakota. This will complete the current 5-year survey cycle in this 13-State area.

GRASSHOPPERS

Grasshopper infestations in range and crop areas were generally light to non-economic. Weather unfavorable for grasshopper development was especially effective in holding down economic populations in Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska, and most of North and South Dakota. In areas where control was necessary, farmers were successful in keeping damage to crops very low.

The dominant species in the cultivated sections of the Region included: Melanoplus bivittatus, M. differentialis, M. femur-rubrum, and M. confusus.

Under cooperative rangeland control programs, infested acreages in the Black Hills area of South Dakota and the Sentinel Butte area of North Dakota were treated. A small infestation in the Lower Brule Indian Agency of South Dakota was also sprayed. By programs, the accomplishments included Pennington, Meade, and Lawrence Counties, South Dakota - 36,922 acres, plus 29,150 acres under farmer-rancher-county control operation; Golden Valley, Billings, and Slope Counties, North Dakota - 12,597 acres; and Lyman County, South Dakota - 2,325 acres.

The dominant species in the Black Hills was M. bilituratus; in North Dakota, Aulocara elliotti and Ageneotettix deorum: and for Lyman County, South Dakota - M. bivitattus, M. confusus, and M. differentialis.

Grasshopper Control Accomplishments, Rangeland - F. Y. 1960

State	Infested Acres			Acreage Treated		
	State & Private	Public	Total	State & Private	Public	Total
N. Dakota	78,500	21,760	100,260	4,473	8,124	12,597
S. Dakota	-	3,000	3,000	60,072	8,325	68,397
Totals	78,500	24,760	103,260	*64,545	16,449	*80,994

*Includes acres treated under voluntary, rancher-county-State Highway-railroad program.

GYPSY MOTH

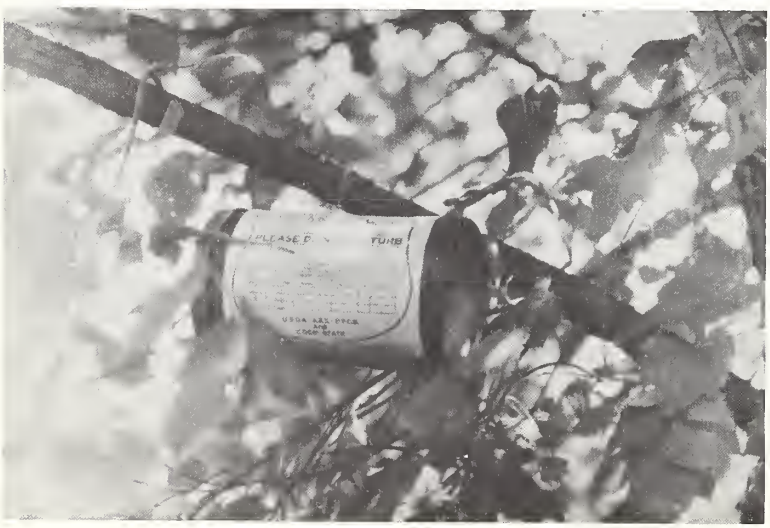
The only known infestation in the Region is in south-central Michigan. Surveys followed by appropriate control measures were begun in 1954, when the first moths were found in the State. Total acres treated to date is 277,631, including 17,494 sprayed during May 1960.

Eradication of this pest from Michigan is the goal of all Federal-State cooperative program activities. Present work policy calls for continued trapping operations each year during the period the male moths move about. Future control action will be contingent upon moths trapped and/or egg masses located.

In northeastern Indiana some scouting for gypsy-moth egg clusters was performed incidental to checking for barberry bushes. No eggs were found.

Accomplishments - Fiscal Year 1960

State	Number of: Traps in Use	Number of: Traps Catching	Number of: Moths Trapped	Infestations Located by Finding Eggs or Larvae	Eradication - Acres Treated
Michigan	4,657	6	44	0	17,494

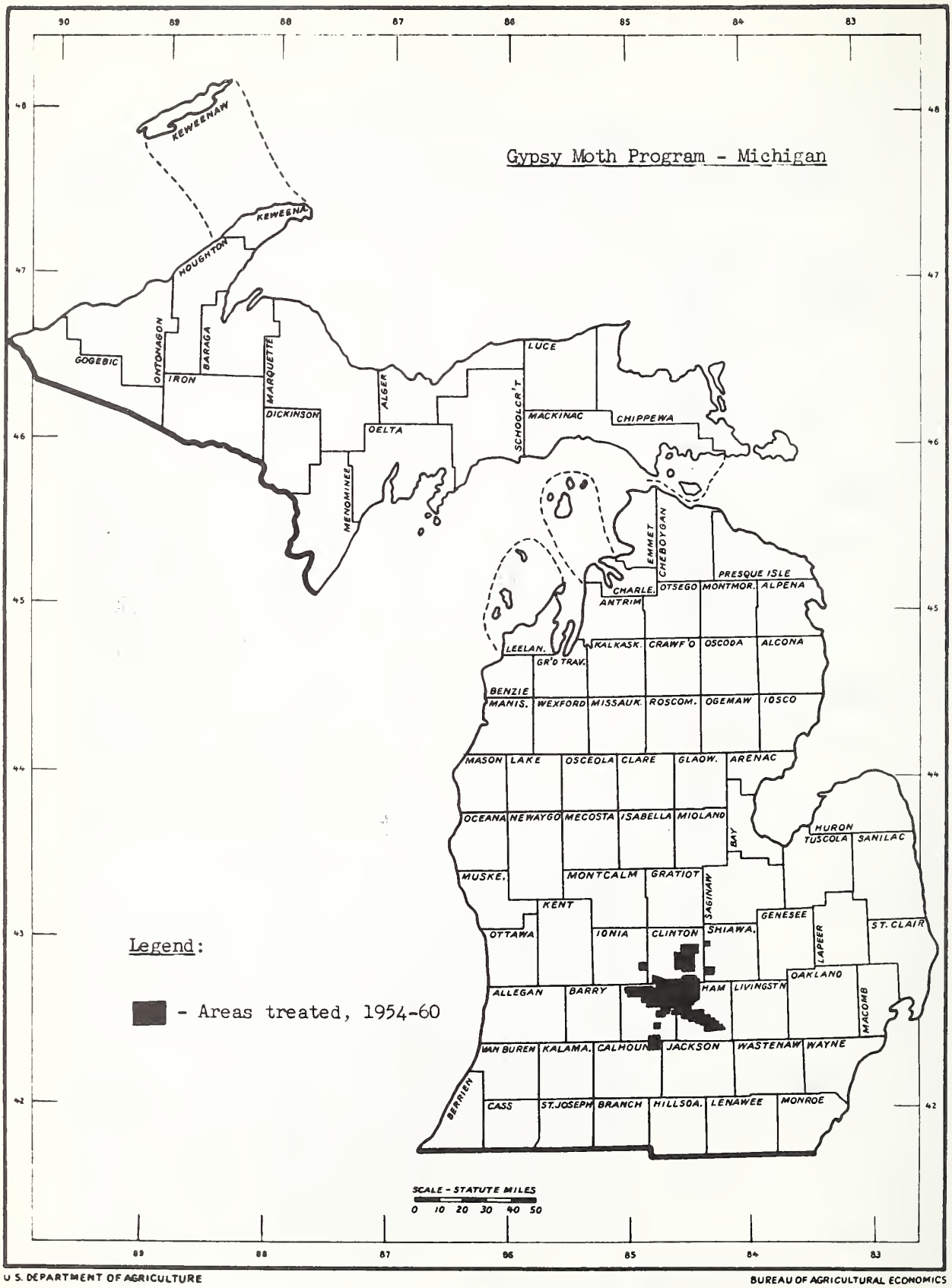


Gypsy-moth trap used in Michigan.

Gypsy-moth Program - Michigan
1954 - 1960

County	Year	Year First Infested	Survey: Male Moths Trapped: Number	Survey: Male Moths Trapped: No. of Locations	Survey: Egg Masses Found: Number	Survey: Egg Masses Found: No. of Locations	Acres Sprayed
Calhoun	1960	X	5	3	0	0	6,974
Clinton	1954	0	0	0	0	0	9,440
	1955	X	2	2	12	1	3,840
	1956	0	0	0	0	0	9,600
	1957	0	0	0	0	0	480
	1958	0	13	5	12*	1	0
	1959	0	0	0	65*	0	14,177
	1960	0	0	0	0	0	0
Eaton	1954	X	50	3	50	1	18,880
	1955	0	24	15	0	0	23,040
	1956	0	1	1	0	0	37,600
	1957	0	0	0	0	0	14,720
	1958	0	1	1	0	0	0
	1959	0	0	0	0	0	2,957
	1960	0	39	3	91	1	10,520
Ingham	1954	X	0	0	4,000	4	58,080
	1955	0	5	5	1	1	6,530
	1956	0	0	0	0	0	50,060
	1957	0	0	0	0	0	0
	1958	0	1	1	0	0	0
	1959	0	0	0	0	0	2,957
	1960	0	0	0	0	0	0
Ionia	1954	X	1	1	0	0	0
	1955	0	0	0	0	0	2,560
	1956	0	0	0	0	0	0
	1957	0	0	0	0	0	0
	1958	0	0	0	0	0	0
	1959	0	0	0	0	0	0
	1960	0	0	0	0	0	0
Shiawassee	1956	X	1	1	0	0	1,600
	1957	0	0	0	0	0	3,680
	1958	0	0	0	0	0	0
	1959	0	0	0	0	0	0
	1960	0	0	0	0	0	0
Totals			143	41	4,231	9	277,695

*12 egg masses found on 3 oak trees in December and 65 in a shed in March--both at same location.



U. S. DEPARTMENT OF AGRICULTURE

BUREAU OF AGRICULTURAL ECONOMICS

JAPANESE BEETLE

Infestations are rather general in parts of Ohio, Indiana, and limited sections of Kentucky. All areas known to be infested as of June 30, 1960, in Michigan, Missouri, and Illinois--except single beetle finds in the Chicago area--have been soil-treated. Beetles have not been found in Wisconsin since 1957, nor in Iowa since 1958. To date this pest is not known to exist in Kansas, Nebraska, Minnesota, North Dakota, and South Dakota.

More than 40,000 traps were in operation during the present fiscal year. The objective of this trapping program was to locate new areas of infestation and to delimit known infested areas.

Federal quarantine measures designed to prevent the spread of Japanese beetles are confined to the eastern one-third of Ohio and small areas under regulation in Franklin, Richland, and Lucas Counties. State quarantines are enforced on a local basis in areas of Ohio, Kentucky, Michigan, Indiana, and Illinois. In Ohio, 3445 service calls were made, involving 158,315,798 plants valued at approximately $16,352,550.

The discovery of an infestation at a nursery north of St. Louis, Missouri, led to problems with ramifications. Nursery stock and soil had been moved from the infested area to approximately 90 properties prior to the finding of beetles. All properties were located and the various shrubs and plants were treated. Both the pour-on and dip-treating methods were used in applying the approved insecticide. Blocks of nursery stock were treated with granulated soil insecticide. A residual barrier also was placed around approximately 600 acres in an attempt to prevent the beetles from infesting adjacent territory.

During the year, infested areas in Illinois, Indiana, Kentucky, and Michigan were treated by aircraft, using a granular insecticide. Spot control work by ground- and hand equipment was also done in Missouri, Indiana, Michigan, Illinois, Kentucky, and Ohio. Some foliage treatment with DDT was performed in South Bend, Mishawaska, and Fort Wayne, Indiana, and Cincinnati, Ohio.

Japanese Beetle Control Accomplishments - Fiscal Year 1960

State	Acres Surveyed	No. Traps Used	New Acres Infested	Acres Treated	
				Ground**	Air
Illinois	4	8,522	15,562	920	34,350
Indiana	1	3,451	41,229	112	1,220
Iowa	7	1,743	5	29	0
Kansas	0	90	0	0	0
Kentucky	209*	1,925	544	604	668
Michigan	0	15,198	31,214	1,364	30,625
Minnesota	0	932	0	0	0
Missouri	2*	3,894	171	1,670	0
Nebraska	0	68	0	0	0
North Dakota	0	30	0	0	0
Ohio	1,483*	6,005	597	3,181	0
South Dakota	0	46	0	0	0
Wisconsin	0	1,101	0	0	0
Totals	1,706	43,005	89,322	7,880	66,863

*Visual only.
**Does not include foliage spray, which totals 3,022 acres.

Ohio only:

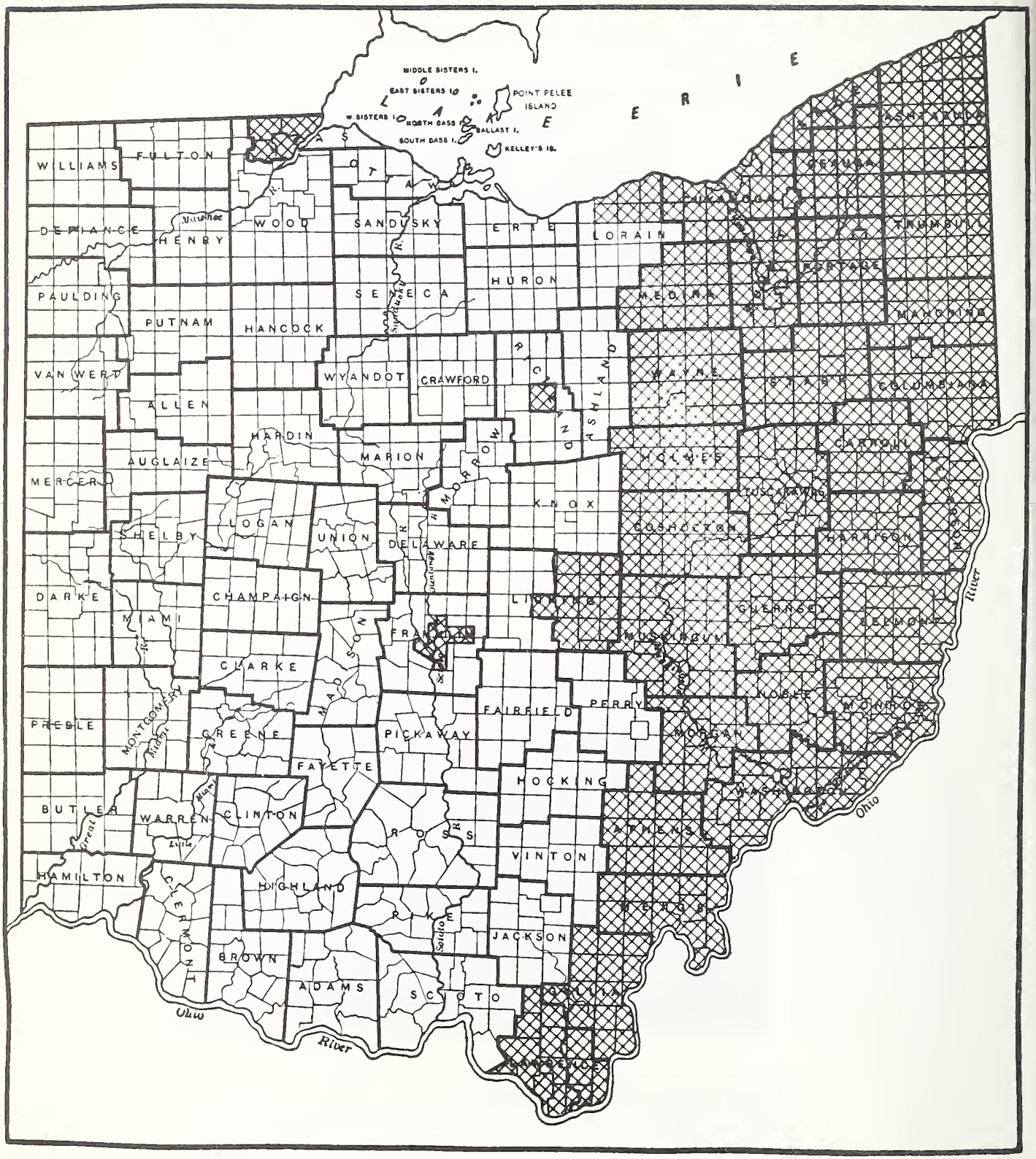
Acres soil-treated for certification purposes		416
Number of plants fumigated	-	33,000,000
" " " dipped	-	65,300,000
" " " soaked	-	60,015,798
Tons of soil heated	-	5,289

Spreading chemical with seedcasters for ground treatment of Japanese beetles. St. Louis, Missouri.

Aerial treatment over farms for control of Japanese beetles. Milford, Illinois.

OHIO

Japanese Beetle Regulated Area



KHAPRA BEETLE

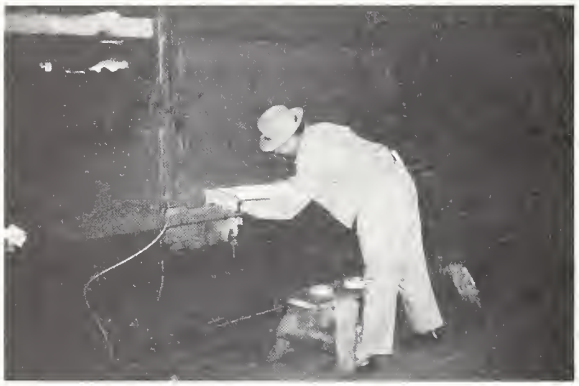
Inspection surveys made in habitats in the Central Region favorable for the development of khapra beetles have all been negative. Over 3,000 inspections have been made of principal storage facilities, seed houses, mills, breweries, and miscellaneous cargo unloaded from ships of foreign origin. Beetles or larval specimens submitted for identification totaled 726. Forty-eight freight cars have been inspected, four of which were fumigated and one spray-treated. These cars had carried khapra-beetle-infested grain prior to their arrival in the Region.

With the opening of the St. Lawrence Seaway to ocean-going vessels in 1959, the chances of the beetle becoming established in this Region have greatly increased.

Special emphasis was given this fiscal year to the inspection of cargo delivered into the Region from ships known to have been infested with khapra beetles. This was particularly true in Minnesota, Wisconsin, Indiana, Michigan, and Ohio. All of these States have ports on the Seaway.

Accomplishments - Fiscal Year 1960

State	Inspections			Specimen Collections for Identification	Infested Sites F.Y. 1960	Total Sites Infested	Sites to be Treated
	Initial	Repeat	Total				
Illinois	108	6	114	19	0	0	0
Indiana	21	0	21	0	0	0	0
Kentucky	4	3	7	0	0	0	0
Michigan	50	2	52	24	0	0	0
Minnesota	34	18	52	22	0	0	0
Missouri	58	44	102	2	0	0	0
Nebraska	6	0	6	22	0	0	0
North Dakota	30	2	32	10	0	0	0
Ohio	185	14	199	7	0	0	0
South Dakota	8	5	13	8	0	0	0
Wisconsin	55	27	82	29	0	0	0
Totals	559	121	680	143	0	0	0



Preparing box car for fumigation for khapra beetle infestation. Oelwein, Iowa.

A Halo light detector is used to check the car for methyl bromide gas leaks prior to fumigation.

PHONY PEACH AND PEACH MOSAIC

Intermittent surveys for the phony-peach disease have been made in the peach-growing areas of the Central Region since 1931. These surveys have covered 14 counties in Illinois, 1 in Indiana, 6 in Kentucky, and 15 in Missouri. Infected trees, as found, were destroyed. The incidence of phony-peach disease in these counties has been very low. Currently Jackson, Massac, Pulaski, and Union Counties, Illinois, and Dunklin County, Missouri, are under regulation by the respective States.

Peach mosaic has not been found in the peach-growing areas of this Region. Annual inspections are made for this disease at Stark's Nursery in Louisiana, Missouri, and across the Mississippi River in Illinois, and of the Neosho Nursery, Neosho, Missouri.

Accomplishments - Fiscal Year 1960

Program and State	No. of Properties Surveyed	No. of Hosts Examined	No. of Properties Infested	No. of Trees Infested	Trees * Destroyed
Phony Peach -					
Illinois	167	390,905	12	31	0
Missouri	27	30,920	0	0	0
Totals	194	421,825	12	31	0
Peach Mosaic -					
Missouri	2	537,176	0	0	0

*Property owners have agreed to destroy all infested trees.

PINK BOLLWORM

The pink bollworm is not known to occur in the Central Region. However, the pest exists in two northeastern Arkansas counties adjacent to the "bootheel" area of Missouri. Some cotton from infested areas in Arkansas is processed in Missouri. Cotton products from these areas are regulated under the provisions of Federal and State quarantines. Nearly 400,000 acres of cotton was grown in the seven southeastern counties of Missouri in 1959. In these counties there are 170 cotton-processing plants. Twenty-four of the plants have entered dealer-carrier agreements, designating them to receive seed cotton and/or cotton products from the regulated area in Arkansas.

State and Federal personnel in Missouri supervised the fumigation of an estimated 500,000 pounds of cotton, in addition to other cotton products, such as moots and ginned cotton.

Thirteen cotton-insect scouts and one supervisor, employed by farmers in cooperation with the University of Missouri Extension Service, checked for pink bollworm through bloom inspection. This group inspected approximately 25,000 acres of cotton.

Spot checks were made in all States of cotton products moving from the regulated areas. Investigations showed all the material was properly consumed by processors in accordance with quarantine requirements.

Accomplishments - Fiscal Year 1960

State	Properties Surveyed	Acres Surveyed	No. of Positive Specimens	No. of Infested Properties	No. of Infested Acres
Missouri	61	131,492	0	0	0

SOYBEAN CYST NEMATODE

Since the surveys for the soybean cyst nematode in the Central Region were started in 1957, infestations have been found in Illinois, Kentucky, and Missouri. The heaviest infestations occur in three "bootheel" counties in southeastern Missouri and Fulton County, Kentucky. Isolated infestations exist in Pulaski County, Illinois, Ballard County, Kentucky, and Stoddard County, Missouri.

Infestations by States, Cumulative to June 30, 1960

State	County	No. Infested Properties	Acres Infested
Illinois	Pulaski	1	20
Kentucky	Ballard	2	75
	Fulton	24	1,704
Missouri	Dunklin	17	650
	New Madrid	14	399
	Pemiscot	185	6,500
	Stoddard	1	60
Totals	7	244	9,408

Favorable weather conditions during the calendar year 1959 in the soybean-cyst-nematode-infested areas were conducive to rapid cyst population increase, resulting in severe damage, and, in some instances, complete loss. In the "bootheel" counties of Missouri, the loss was estimated at more than $43,000. Similar damage occurred in Fulton County, Kentucky, but was not as widespread.

In the Central Region during the fiscal year soil samples were taken from 3,514 properties consisting of 99,190 acres. In addition, symptom surveys were made of 659 properties covering 50,641 acres.

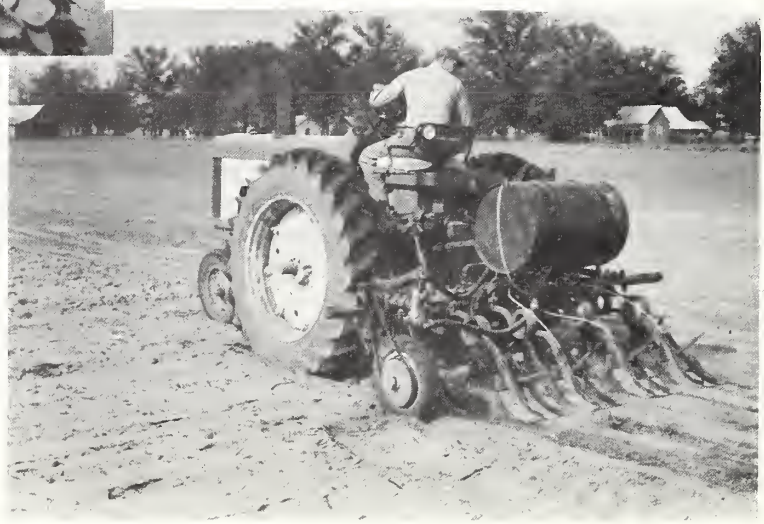
The single infested field in Pulaski County, Illinois, was treated with DD on an experimental basis. The field was placed in the Land Bank; consequently no host crop will be planted for at least five years.

Accomplishments, Soybean Cyst Nematode Control - Fiscal Year 1960

State	Properties Surveyed	Acres Surveyed	No. of Infested Props.	No. of Infested Acres	No. of Acres Fumigated
Illinois	385	13,150	1	20	20
Kentucky	1,438	36,951	17	811	0
Minnesota	341	9,979	0	0	0
Missouri	1,254	41,398	53	1,947	0
North Dakota	165	16,000	0	0	0
Ohio	228	5,106	0	0	0
South Dakota	361	27,232	0	0	0
Wisconsin	1	15	0	0	0
Totals	4,173	149,831	71	2,778	20

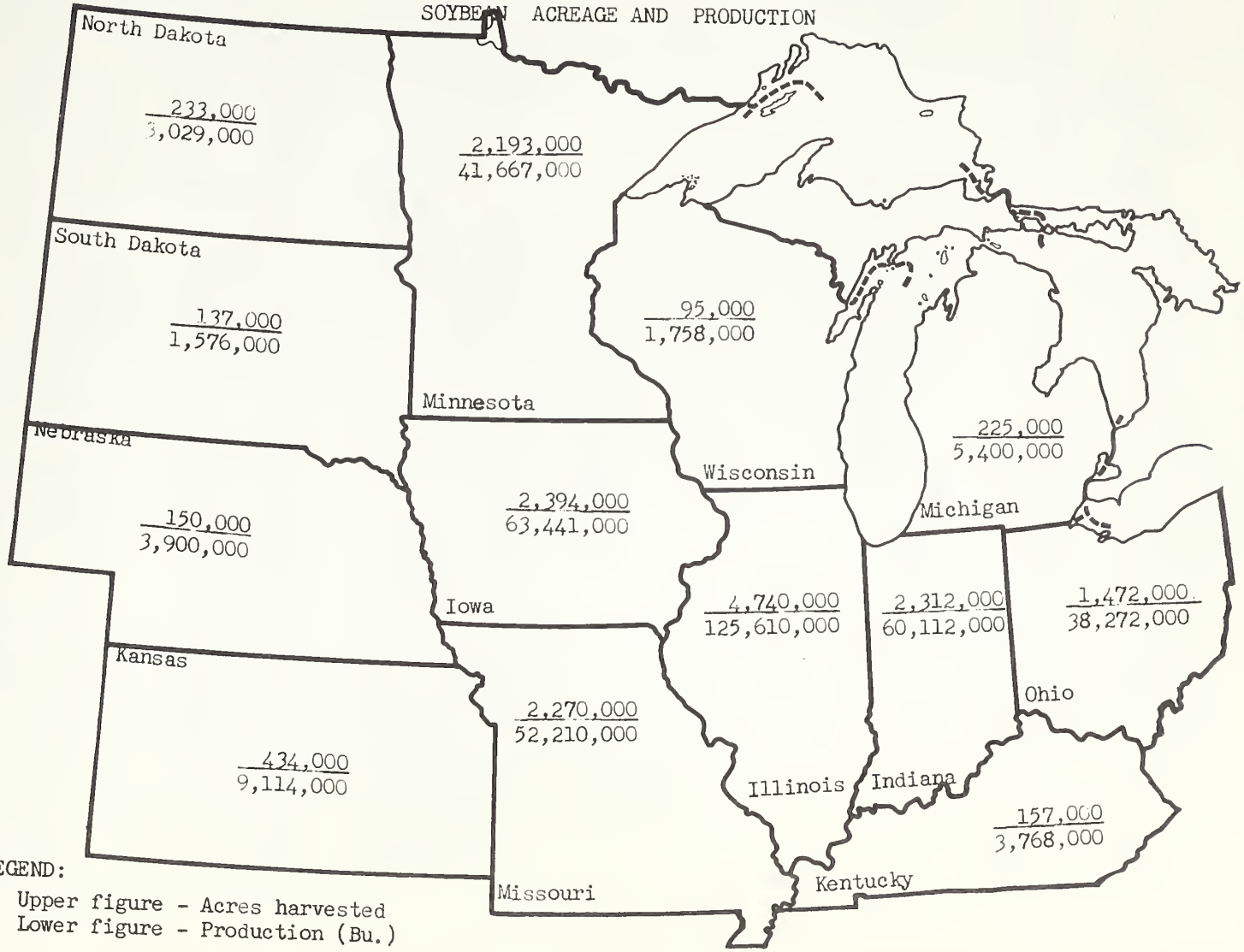
At left: Extensive soybean-cyst-nematode damage. Field in Pemiscot County, Missouri.

Below: Applicator equipment used in Pulaski County, Illinois, to treat 20-acre soybean-cyst-nematode-infested area with DD.



CENTRAL REGION

SOYBEAN ACREAGE AND PRODUCTION



LEGEND:

Upper figure - Acres harvested
Lower figure - Production (Bu.)

WHITE-FRINGED BEETLE

Surveys have failed to reveal the presence of this beetle in southern Illinois, western Kentucky, and southeastern Missouri counties. It has been found in northeastern Tennessee, approximately 15 miles south of the Kentucky-Tennessee State line.

One carload of potatoes was shipped to Cincinnati from New Orleans in violation of Quarantine 72. The potatoes and box car were fumigated.

Accomplishments - Fiscal Year 1960

State	Properties Surveyed	Acres Infested
Missouri	20	0

ASSOCIATED ACTIVITIES

Program service activities are an important part of the Division's program activities. These are conducted principally through the facilities of, and in cooperation with, the Extension specialists, county agents, and the publicity section of the State Departments of Agriculture. The Division provided informational data and exhibit materials, and assisted in disseminating them to farmers, property owners, industry, and agricultural agencies.

Division and cooperating personnel discussed applicable program activities formally and informally at farm- and civic-group meetings, crop shows, and college- and high school agriculture and science classes. Appropriate sound films and 2 x 2 slides were used to supplement the discussions. Federal and cooperating agencies also participated in numerous radio and television programs.

The Japanese beetle poster was prominently displayed throughout the Region to alert carriers and the public in general to this pest as one means of reducing the hazard of spread. Appropriate exhibits were placed at various agricultural and industrial gatherings. Feature- and news stories appeared in various newspapers and farmer publications to inform the public of the Division's cooperative programs. During the year, a total of 60,330 bulletins, circulars, and informational material was disseminated.

P L A N T P E S T C O N T R O L

COOPERATIVE PROGRAMS

EASTERN REGION

FISCAL YEAR

1960

October, 1960
Moorestown, New Jersey

U.S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division

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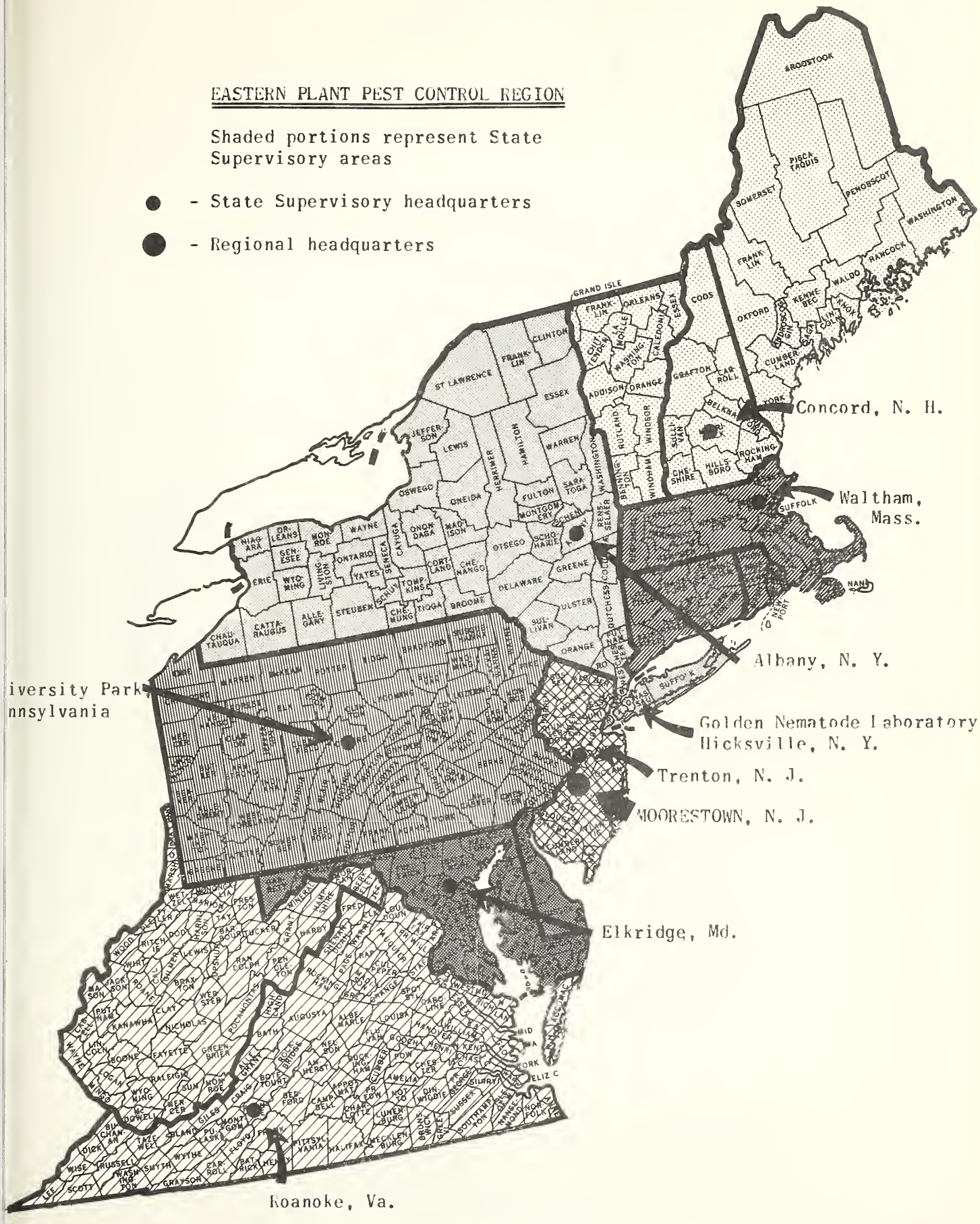
EASTERN PLANT PEST CONTROL REGION

Shaded portions represent State Supervisory areas

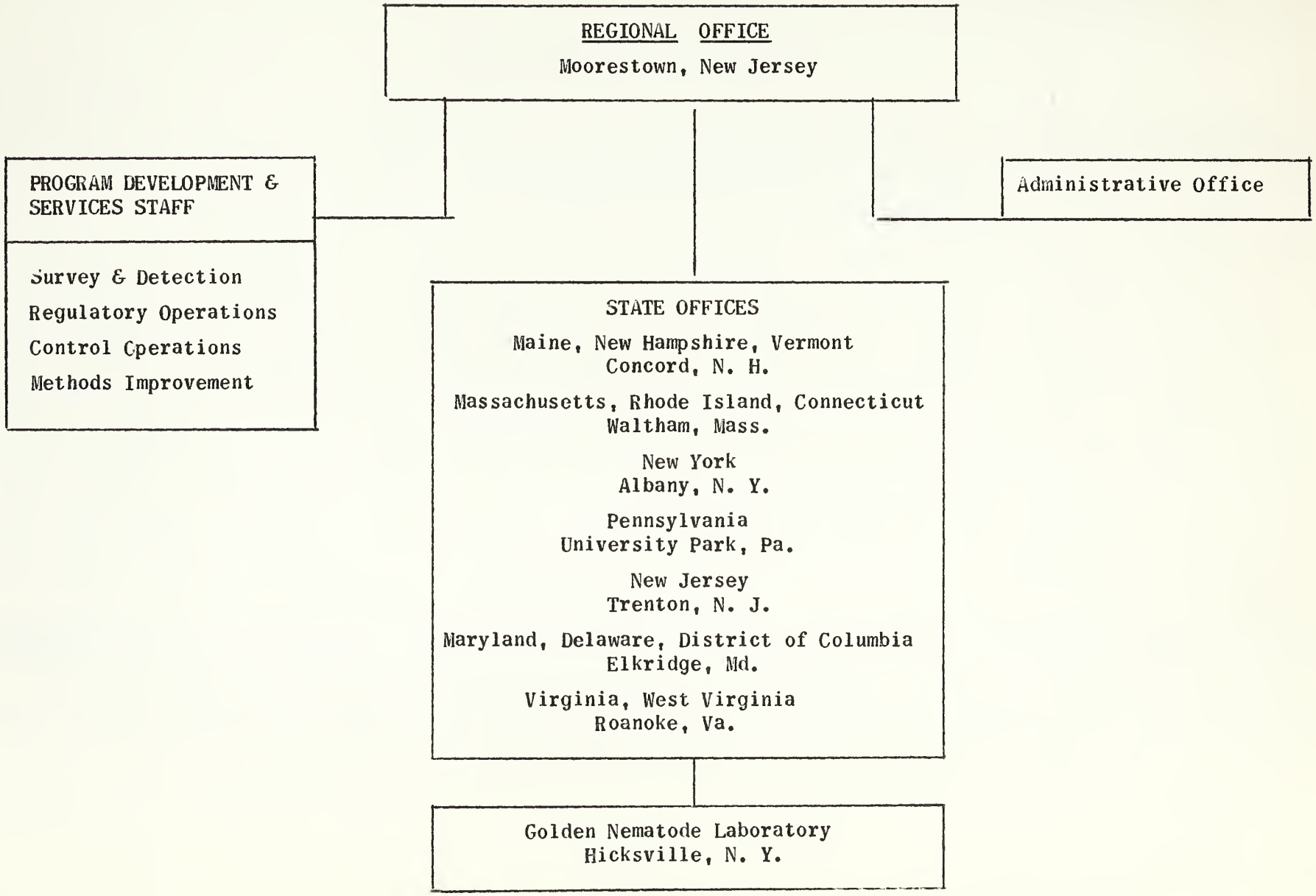
● - State Supervisory headquarters

● - Regional headquarters



GPO 958935

EASTERN PLANT PEST CONTROL REGION



SUMMARY OF ASSOCIATED ACTIVITIES

Eastern Region — Fiscal Year 1960

Program	Number Persons Attend.	Public Mtngs.	Presentations: Talks	Presentations: Slides	Presentations: Films	Presentations: Radio	Presentations: TV	Feature & News Stories	Extent Used: Exhibits	Extent Used: Bull. & Circlrs.	Extent Used: Infest. Maps & Posters	Spec.
Barberry	8,822	67	17	4	96	-	-	17	6	4,957	60	729
European Chafer	10,541	-	4	4	3	-	-	2	1	606	7	-
Golden Nematode	2,727	-	2	-	3	-	-	-	1	103	-	-
Gypsy Moth	554,957	15	119	8	141	1	4	78	9	17,663	4,902	731
Japanese Beetle	108,246	122	125	6	168	-	1	4	10	9,665	4,347	728
Khapra Beetle	877	1	2	1	9	-	-	-	-	3,324	10	731
Soybean Cyst Nem.	35	1	2	2	1	-	-	-	-	3,100	1	2
White-Fringed Beetle	-	-	-	-	-	-	-	-	-	100	-	-
Witchweed	4,360	1	1	3	-	-	-	-	-	1,196	2	730
TOTAL - FY - 1960	690,565	207	272	28	421	1	5	101	27	40,714	9,329	3,651

BARBERRY ERADICATION

Fiscal Year 1960

In the Eastern Region, the states of Pennsylvania, Virginia, and West Virginia participated in the eradication of rust-spreading barberry bushes to protect cereal crops. During the year ending June 30, 1960 a total of 4,383,850 barberry bushes were destroyed over an area of 1,255 square miles. This area included 548 square miles of initial coverage and 707 square miles of rework. Rust-spreading barberries were found on 255 new properties and on 1,076 old properties rechecked. A total of 330 previously infested properties was relegated to an inactive status and 516 square miles of territory were placed on maintenance.

Observations were made in all important small grain growing areas for occurrence and severity of rust infection. Stem rust occurrence was at a minimum and losses were very light. Samples of infected material were submitted to the Federal Rust Laboratory for race determination.

Readings were made at the uniform rust nursery established in Lancaster County, Pennsylvania in fiscal year 1959 by the Pennsylvania State University Experiment Station. Rust collections from this nursery were forwarded to the Federal Rust Laboratory for study. A second uniform rust nursery was established in Huntingdon County, Pennsylvania and readings will be taken there beginning fiscal year 1961. Plant Pest Control Division personnel cooperated in establishing and maintaining these plots.

During the year, 131 nurseries and 27 dealer establishments were inspected and issued certificates or permits for the interstate movement of products regulated under Quarantine No. 38.

PROPERTIES CLEARED AND BARBERRY BUSHES DESTROYED

Barberry Eradication

Fiscal Year 1960

	SQUARE MILES WORKED		PROPERTIES FOUND INFESTED		OLD PROPERTIES INSPECTED	BARBERRY BUSHES DESTROYED		INSPECTIONS	
	Initial	Rework	New	Old		Common	Native	Nursery	Dealer
Connecticut	-	-	-	-	-	-	-	8	1
Delaware	-	-	-	-	-	-	-	8	0
Maryland	-	-	-	-	-	-	-	15	2
Massachusetts	-	-	-	-	-	-	-	4	0
New Jersey	-	-	-	-	-	-	-	20	2
New York	-	-	-	-	-	-	-	22	17
Pennsylvania	518	483	187	644	1,112	84,548	-	27	3
Rhode Island	-	-	-	-	-	-	-	5	0
Virginia	22	183	44	368	682	-	3,231,900	17	0
West Virginia	8	41	24	64	169	2	1,067,400	4	0
Washington, D. C.	-	-	-	-	-	-	-	1	2
Total FY-1960	548	707	255	1,076	1,963	84,550	4,299,300	131	27
Total from beginning of program	38,712	13,590	19,768	19,230	38,209	15,505,115	409,145,906	xxx	xxx

Square miles placed on maintenance FY 1960 - 516 ; since beginning of program - 32,753.
Properties made inactive - 2816

PRESENT STATUS, PROGRESS, AND FUTURE REQUIREMENTS, 1934-1960

Barberry Eradication

Fiscal Year 1960

	SQUARE MILES						PROPERTIES			BARBERRY BUSHES DESTROYED TO DATE
	Total in State to be Worked	Number Covered		Number Requiring Work One or More Times		Number Requir. No Future Work	Total Found to Date	Number Needing One or more Reinspections	Number Completed	
		Initial Work	Rework	Initial	Rework					
Pennsylvania	27,804	21,633	7,281	6,171	4,379	17,254	12,423	11,466	957	15,459,254
Virginia	12,535	11,501	4,288	1,034	1,040	10,461	5,070	3,448	1,622	227,733,508
W. Virginia	5,681	5,578	2,021	103	539	5,039	2,275	2,038	237	181,458,259
Totals	46,020	38,712	13,590	7,308	5,958	32,754	19,768	16,952	2,816	424,651,021

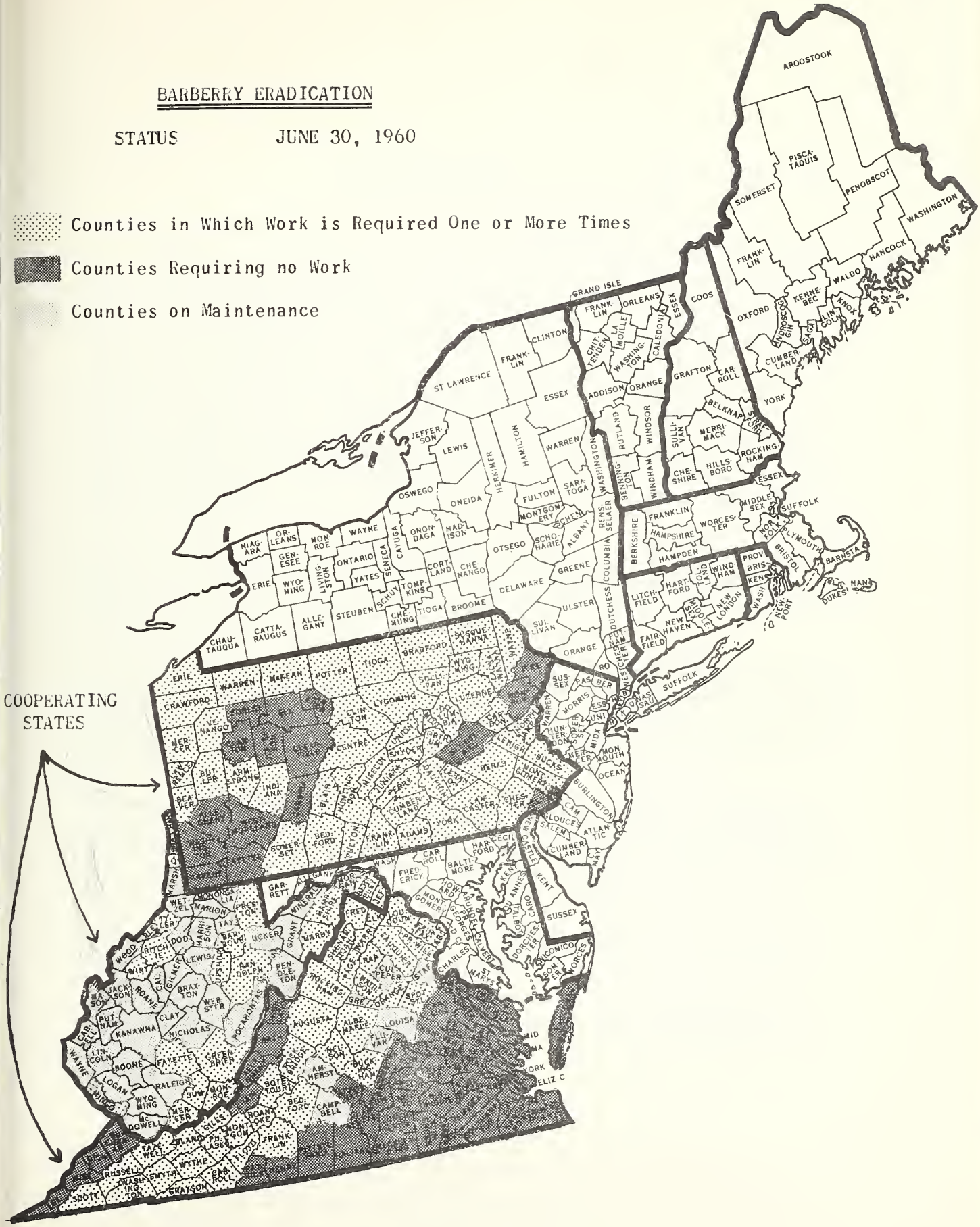
BARBERRY ERADICATION

STATUS JUNE 30, 1960

Counties in Which Work is Required One or More Times

Counties Requiring no Work

Counties on Maintenance



GPO 958935

EUROPEAN CHAFER Fiscal Year 1960

Surveys during the summer of 1959 disclosed additional spots of infestation in both upstate and metropolitan areas of New York. In Niagara County, extension of infestation was found at Lockport, and at Niagara Falls. New infestation was also found in Southport, Chemung County, which may be associated with the previous infestation in the nearby city of Elmira. Extensions of infestations at those three locations were later found in June, 1960. No infestation was detected at previously infested and treated sites at Buffalo, Elmira, and Minetto. In the New York Harbor area, additional infestations were found in Brooklyn, and new infestations were found in Battery Park, Manhattan; on Liberty Island, Governors Island, and on the north shore of Staten Island. On the latter island, two new sites on the east shore were found infested in June, 1960.

No infestation was detected at the previously infested location at Meriden, Connecticut, during the 1959 summer survey. However, adults were observed and collected at the original site of infestation (within the regulated area) in June, 1960.

All new infestations in the New York Harbor area, with the exception of Brooklyn, were treated with insecticides in the fall of 1959. The new infested site at Capon Bridge, West Virginia, and isolated infestations in upstate sections of New York also were treated. Total acreage soil treated amounted to 919.

The Federal and New York State quarantines were revised to bring under regulation all of Kings County (Brooklyn), five additional towns in Onondaga County, and the town and village of Waterloo, Seneca County. The Federal quarantine revision, effective March 26, 1960, also included Governors Island, New York, a military installation.

During the year regulated articles having an estimated value in excess of 20 million dollars were certified for movement from regulated areas.

A limited number of black light traps were used in conjunction with manual scouting around the periphery of certain known infestations. Detection methods for this pest are still inadequate and present the major program operational problem.

EUROPEAN CHAFER

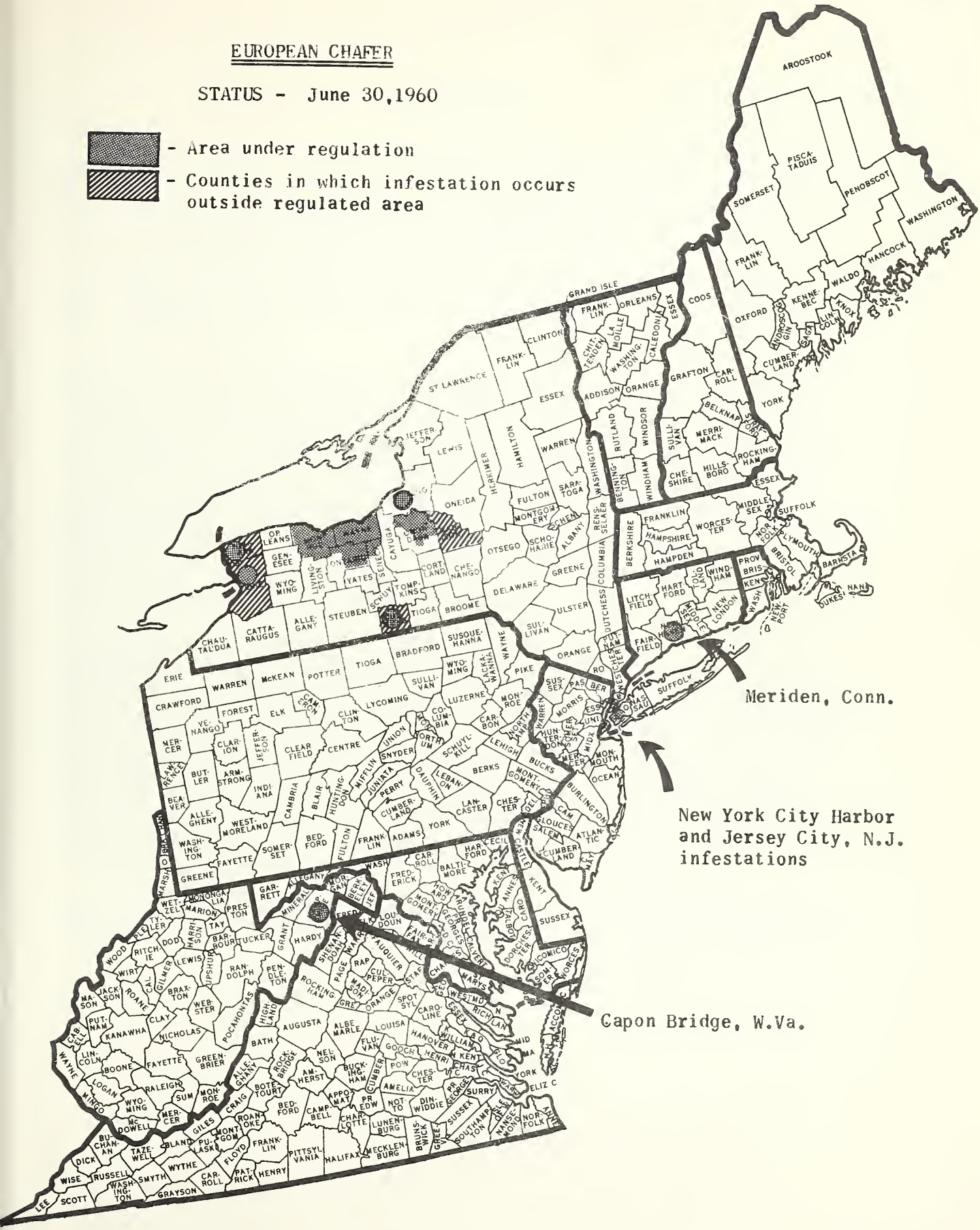
SUMMARY OF FIELD ACTIVITIES - FISCAL YEAR 1960

STATE	SURVEY				CONTROL TRTMNTS.	CERTIFICATION SERVICES	
	Traps in Use	Locations Scouted	Acres of New Infestatn. Regulated Area	Acres of New Infestatn. Non-Regulated Area	Soil (Acres)	Total Service Calls	Est. Value Products Certified
							$
Connecticut	8	20	-	-	-	9	-
Massachusetts	2	1	-	-	-	-	-
New Jersey	3	212	-	20	-	-	-
New York	35	546	1,000	4,500	870.5	1,527	25,535,373
Pennsylvania	-	310	-	-	-	-	-
W. Virginia	45	13	-	-	49	-	-
Ttl. FY-1960	93	1,102	1,000	4,520	919.5	1,536	25,535,373
Ttl. from Beginning of Program	xxx	xxxx	694,984	7,620	4,456.	8,289	132,634,697

EUROPEAN CHAFER

STATUS - June 30,1960

- Area under regulation
- Counties in which infestation occurs outside regulated area



GPO 958935

GOLDEN NEMATODE

Fiscal Year 1960

Long Island, New York is the only area in the United States known to be infested with golden nematode. Surveys conducted this fiscal year in Maine, Rhode Island, Massachusetts, Pennsylvania, Delaware, New Jersey and upstate New York failed to reveal presence of this pest. On Long Island, field surveys disclosed additional infestation on 15 new properties representing 644 acres. Since the beginning of the program, this pest has been found on 347 properties comprising 14,982 gross acres of land. However, real estate development has removed about 8,424 acres from agricultural use.

The fact that the majority of new infestations this fiscal year were found in the important potato producing area of eastern Long Island made it apparent that a more aggressive approach to the problem was needed. Accordingly, a cooperative Federal-State program was devised having as its objective, the eventual elimination of the golden nematode from Long Island. It was to be of a progressive nature entailing treatment of approximately 1,000 acres annually for a period of six years. Proof of the feasibility of eradication had been demonstrated by field-scale fumigation tests. Fields treated experimentally in 1956 had been planted to potatoes for three successive years and surveys conducted at the end of each crop year failed to reveal the presence of viable cysts.

The eradication program was initiated on eastern Long Island June 21, 1960. Treatment consists of injecting a mixture of dichloropropane-dichloropropene to a depth of six inches with tractor-drawn shank-type applicators. The soil fumigant is applied at the rate of 90 gallons per acre in split applications of 45 gallons each, with a minimum interval of ten days. Prior to the second treatment, farmers are required to turn the soil over using special coulter-jointer attachments on their plows so that the top three inches of soil are thrown into the bottom of the furrow where it will come in contact with fumigant applied during the second treatment. Post treatment surveys will be made two weeks following completion of the second treatment.

The Division continued to cooperate with the New York Department of Agriculture and Markets in the enforcement of its quarantine regulations.

STATUS OF GOLDEN NEMATODE INFESTATION
as of
June 30, 1960

Confirmed Acreage Long Island	14,981.87		
Less: Developed for Real Estate	8,423.98		
Remaining Confirmed Acreage Available to Agriculture			6,557.89

- -

Classification of Land Available to Agriculture

Nassau County			
Confirmed Acreage	9,719.20		
Less: Developed for Real Estate	7,811.90		
Remaining Confirmed Acreage Available to Agriculture		1,907.30	
Suffolk County			
Confirmed Acreage	5,262.67		
Less: Developed for Real Estate	612.08		
Remaining Confirmed Acreage Available to Agriculture		4,650.59	
Remaining Confirmed Acreage Available to Agriculture, Nassau and Suffolk Counties			6,557.89

- -

Quarantine "A" Land:			
Nassau County	1,078.67		
Suffolk County	2,319.10		
Total "A" Land:		3,397.77	
Quarantine "B" Land:			
Nassau County	828.63		
Suffolk County	2,331.49		
Total "B" Land:		3,160.12	
Total "A" and "B" Land			6,557.89

PROPERTIES FOUND INFESTED WITH GOLDEN NEMATODE

July 1, 1959 to June 30, 1960

NASSAU COUNTY:

Property No.	Operator	Acres
--	--	--

SUFFOLK COUNTY

Property No.	Operator	Acres
1-A-14	F & P Meyers	41.00
2-A-10,11	H. Froehlich	44.00
9-B-8	Wm. Schneider	41.60
10-E-26	Ed. Harbes	32.66
14-A-77	F. Bartel & Son	74.00
20-A-23,24,25,26	Jurgen Bros.	109.29
37-A-52	A. Krupski & Sons	9.84
37-A-55	Ed. Zuhoski	30.00
37-A=57	A. Krupski & Sons	22.00
37-D-2	A & H. Domaleski	25.00
37-D-6	A. Krupski & Sons	30.00
37-D-8	Ficner Bros.	48.00
38-A-17	J. McNamara	65.00
38-A-19	B & J Babinski	14.45
40-G-10	A. Krupski & Sons	57.00

Total Nassau and Suffolk Counties-643.84 Acres

SUMMARY OF PROPERTIES AND ACREAGE ON LONG ISLAND, N.Y.
FOUND TO CONTAIN GOLDEN NEMATODE INFESTATION

June 30, 1960

	NASSAU COUNTY		SUFFOLK COUNTY		TOTALS	
YEAR	No. of Properties	No. of Acres	No. of Properties	No. of Acres	No. of Properties	No. of Acres
1941	2	115.66			2	115.66
1942	9	541.86			9	541.86
1943	8	437.36			8	437.36
1944	5	142.98			5	142.98
1945	5	165.88			5	165.88
1946	41	1,656.50			41	1,656.50
1947	52	2,793.28	1	30.00	53	2,823.28
1948	27	1,034.66	6	216.95	33	1,251.61
1949	22	663.00	7	350.15	29	1,013.15
1950	22	660.56	6	232.88	29	893.44
1951	16	544.75	10	302.80	26	847.55
1952	13	261.12	12	790.61	25	1,051.73
1953	8	167.43	19	989.20	27	1,156.63
1954	3	143.24	5	266.00	8	409.24
1955	2	130.00	3	85.30	5	215.30
1956			3	153.00	3	153.00
1957	1	7.92	7	263.70	8	271.62
1958	2	181.00	4	322.94	6	503.94
1959	1	72.00	10	615.30	11	688.30
1960	0	0	15	643.84	15	643.84
TOTALS	239	9,719.20	108	5,262.67	347	15,081.87

AREAS SURVEYED	FIELD SURVEY		GRADER SURVEY			INFESTATIONS		TOPSOIL MOVEMENT		Total
	Acres	Samples Collected	Stations Visited	Samples Collected	Acres Represented	Properties	Acres	Pits Operating	Loads Moved	Service Calls
Long Island										
Nassau County	809	1,959						23	18,407	
Suffolk County	23,670	44,404						16	10,187	
Ttl. F.Y. 1960	24,479	46,363				15	*644		28,594	2,775
Ttl. from beginning of Program	586,392	1,024,652				347	*14,982		470,532	10,517
Other Areas by State:										
Delaware	2,849	4,425								
Maine	24,485	2,072	110	199	4,523					
Massachusetts			73	544	2,327					
New Jersey	711	972	159	1,403	4,471					
New York	1,707	2,227	104	1,390	14,217					
Pennsylvania	2,200.5	2,910	26	66	616					
Rhode Island	8	4	35	374	2,004					
Ttl. F.Y. 1960	31,960.5	12,610	507	3,996	28,158					
Ttl. from beginning of Program. (L.I. excluded)	173,828.5	107,970	11,556	100,363	650,845					

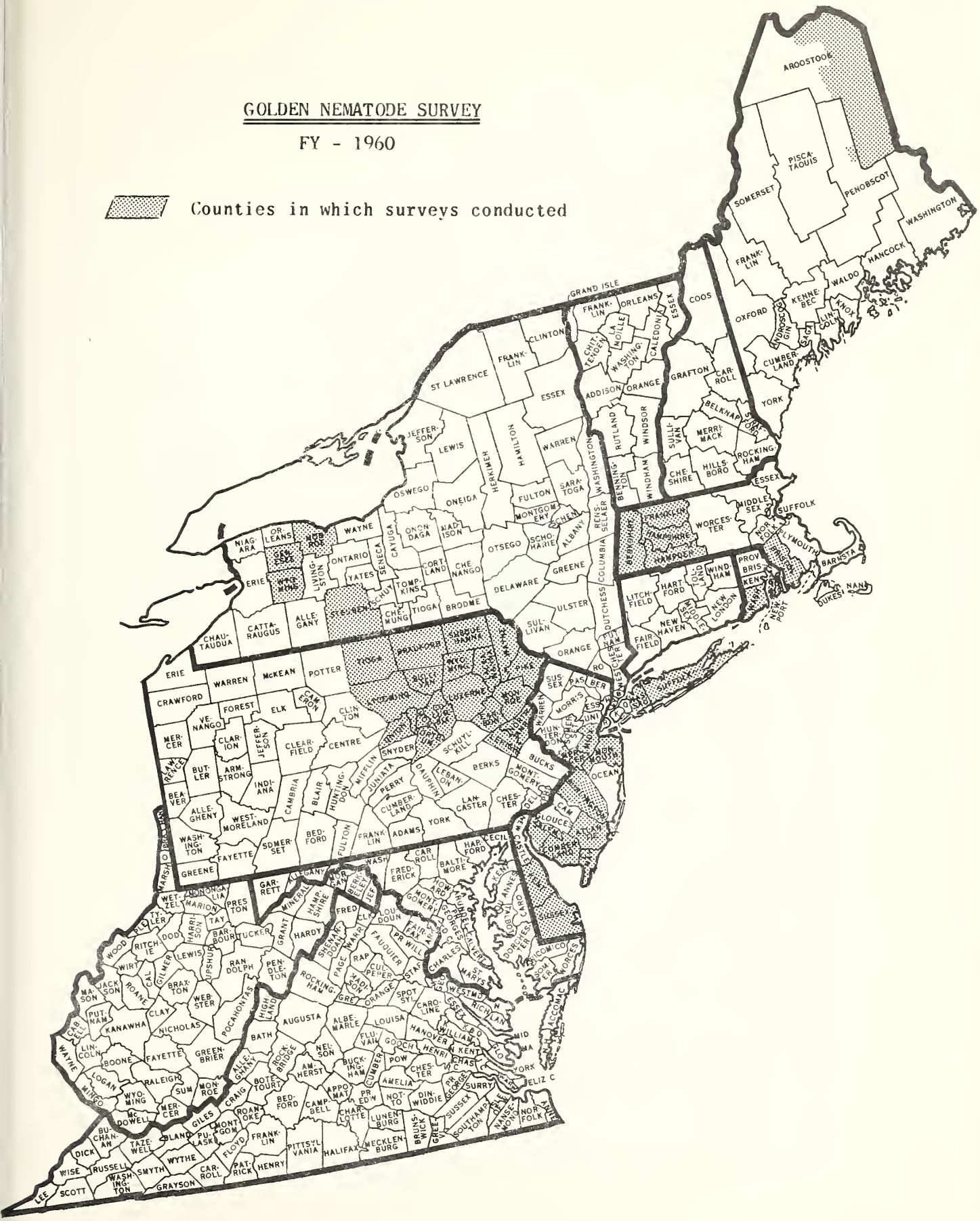
Acres removed by housing developments - 8424 (from beginning of program)
Acres "A" land - 3398 -("A" land is that portion of field in which golden nematode cysts have been found.)
Acres "B" land - 3160 -("B" land is that portion of an infested field in which golden nematode cysts have not been found.)

*Breakdown of infested acreage into "A" and "B" land has been determined.

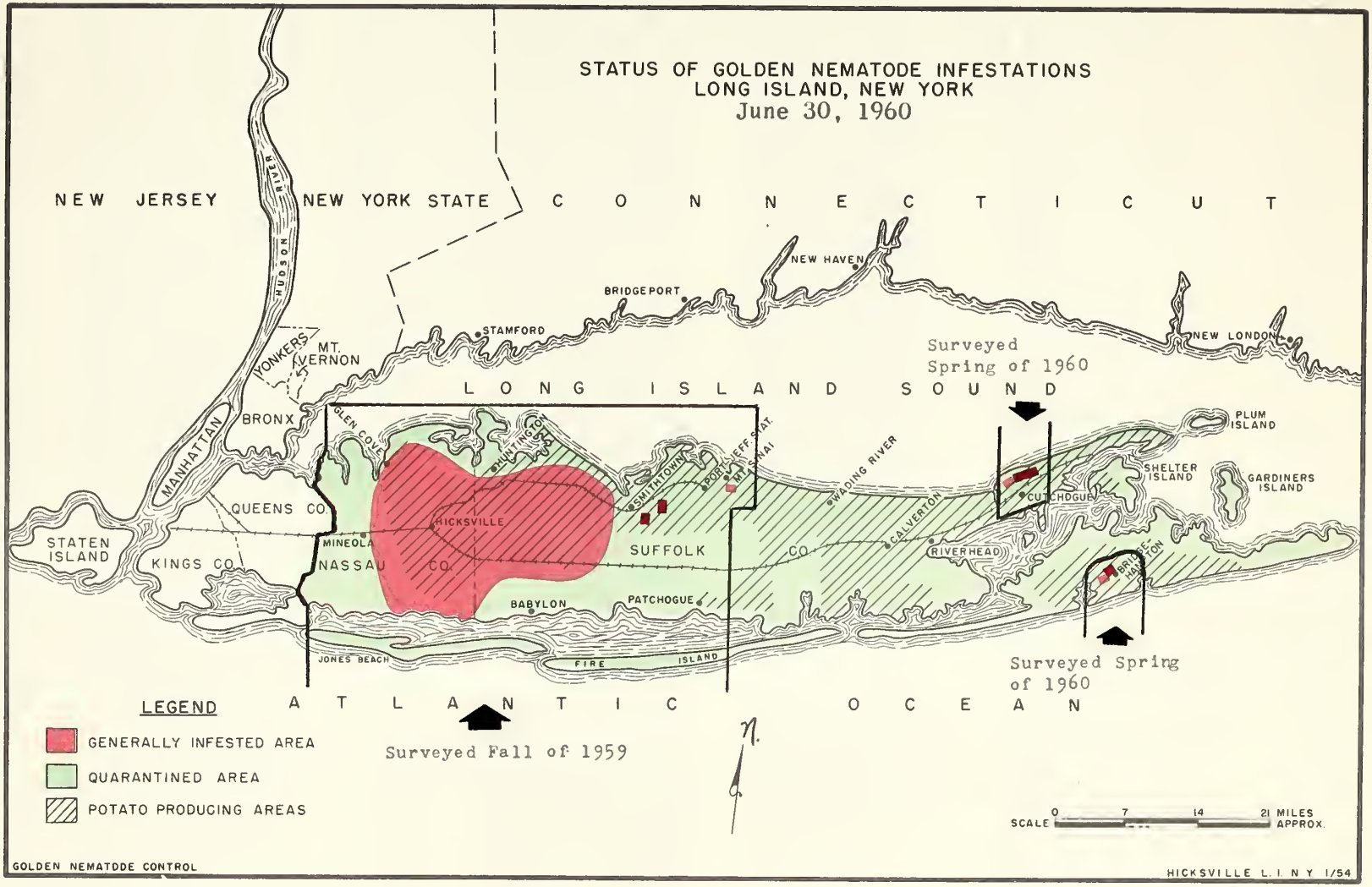
GOLDEN NEMATODE SURVEY

FY - 1960

Counties in which surveys conducted



GPO 958935


STATUS OF GOLDEN NEMATODE INFESTATIONS
LONG ISLAND, NEW YORK
June 30, 1960
NEW JERSEY
NEW YORK STATE
C O N N E C T I C U T
HUDSON RIVER
NEW HAVEN
BRIDGEPORT
STAMFORD
YONKERS
MT. VERNON
BRONX
MANHATTAN
L O N G I S L A N D S O U N D
Surveyed Spring of 1960
NEW LONDON
PLUM ISLAND
SHELTER ISLAND
GARDINERS ISLAND
GLEN COVE
HUNTINGTON
SMITHTOWN
POQUOTT
JEFFERSON
MATTITUCK
WADING RIVER
CUTCHOGUE
CALVERTON
RIVERHEAD
BRIDGEHAMPTON
QUEENS CO.
STATEN ISLAND
KINGS CO.
MINEOLA
HICKSVILLE
NASSAU CO.
SUFFOLK CO.
BABYLON
PATCHOGUE
JONES BEACH
FIRE ISLAND
A T L A N T I C O C E A N
Surveyed Spring of 1960
Surveyed Fall of 1959
LEGEND
GENERALLY INFESTED AREA
QUARANTINED AREA
POTATO PRODUCING AREAS
N.
SCALE 0 7 14 21 MILES APPROX.
GOLDEN NEMATODE CONTROL
HICKSVILLE L. I. N Y 1/54

GPO 945935

GYPSY MOTH

Fiscal Year 1960

Surveys during the year indicated a build-up of infestation in many sections of the generally infested area. Defoliation in 1959 was noted on 14,467 acres as compared to the record low of 125 acres in 1958.

Over 32,000 sex attractant traps were employed to survey about fifteen million acres of territory in the Eastern Region to detect isolated infestations and to determine eradication, control, and regulatory requirements. In New York, no moths were recovered outside the regulated area, however, trap recoveries were made at many scattered locations within the sprayed areas in eastern Long Island and in Dutchess and Putnam Counties. These recoveries indicate serious infiltration of the insect from nearby generally infested areas. Traps recovered moths at two locations in New Jersey and a single moth was captured in south-central Pennsylvania.

Scouting of positive trap sites in New York resulted in the finding of five infestations comprising 9 egg masses on Long Island, and six infestations totalling 33 egg masses in Delaware County, all in the suppressive area. Numerous small infestations were found in the periphery of the generally infested area in Oneida, Herkimer and Otsego Counties. Thirteen egg masses were found in Jockey Hollow National Park, one of the two positive trap sites in New Jersey. Scouting in Pennsylvania was negative.

In the spring of 1960, a total of 2,412 acres were cooperatively sprayed with DDT to eradicate the isolated infestation in the Jockey Hollow National Park, New Jersey. In a cooperative Federal-State methods improvement undertaking in the four counties of Oneida, Herkimer, Otsego and Delaware, New York, 11,435 acres involving spot infestations were aerially sprayed with the insecticide Sevin. The five infested sites on Long Island totalling 100 acres were sprayed with DDT applied by mist blower. In addition, State agencies treated 67,460 acres to suppress populations within the generally infested area.

Articles valued at more than 20 million dollars were certified for movement from regulated areas during the year. This regulatory activity required nearly 20,000 service calls.

In cooperation with Pesticide Chemicals Research Branch, the search for alternate safe insecticides for gypsy moth eradication continued. A series of tests involving aerial spraying of experimental plots took place in Maine and Vermont. Test results were still being evaluated at the end of the year. Also, a number of synthetic attractants and different types of traps were field tested in New Hampshire during July and August of 1959. Two synthetic materials showed significant attractiveness to male moths although neither one was as attractive as the natural material. Paper traps compared favorably with the standard metal trap.

The final report of a five-year study by a consultant forester to determine the damage to white pine trees by gypsy moth defoliation was completed in June.

GYPSY MOTH

FISCAL YEAR 1960

STATE	SURVEY								
	OUTSIDE REGULATED AREA				INSIDE REGULATED AREA				
	NUMBER OF				NUMBER OF				
	Traps in Use	Traps Catching	Moths Trapped	Infestations Located by Finding Eggs or Larvae Only	Traps in Use	Traps Catching	Moths Trapped	Infestations Located by Finding Eggs or Larvae Only	Acres Defoliated by G.M.
Connecticut	-	-	-	-	-	-	-	-	5,980
Delaware	187	-	-	-	-	-	-	-	-
Maine	645	-	-	-	-	-	-	-	1,000
Maryland	490	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	-	-	-	-	-	382
New Hampshire	-	-	-	-	-	-	-	-	4,000
New Jersey	5,369	7	7	1	-	-	-	-	-
New York	41	-	-	-	13,943	625	1,607	11	1,605
Pennsylvania	10,950	1	1	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	18	2	3	-	-	-	-	-	1,500
Virginia	299	-	-	-	-	-	-	-	-
West Virginia	156	-	-	-	-	-	-	-	-
Washington, D.C.	-	-	-	-	-	-	-	-	-
Ttl. FY - 1960	18,155	10	11	1	13,943	625	1,607	11	14,467
Grand Total Since April 1, 1956	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	64,208

GYPSY MOTH

Fiscal Year 1960

STATE	ACRES SPRAYED				CERTIFICATION SERVICES	
	ERADICATION		SUPPRESSION		Total Service Calls	Estimated Value Products Certified
	Federal	State and Other	Federal	State and Other		
Connecticut	-	-	-	20,000	1,926	2,022,802
Delaware	-	-	-	-	45	-
Maine	-	-	-	775	2,162	3,021,701
Maryland	-	-	-	-	125	-
Massachusetts	-	-	-	1,800	2,287	1,283,717
New Hampshire	-	-	-	650	1,699	2,257,933
New Jersey	2,412	-	-	-	-	-
New York	*11,535	-	-	10,581	6,975	10,398,239
Pennsylvania	-	-	-	-	-	-
Rhode Island	-	-	-	33,269	500	737,318
Vermont	=	-	-	385	3,998	3,326,222
Virginia	-	-	-	-	-	-
West Virginia	-	-	-	-	-	-
Washington, D. C.	-	-	-	-	3	-
Total - FY-1960	13,947	-	-	67,460	19,720	23,047,932
Grand Total since April 1, 1956	3,972,260	223,757	40,202	756,811	87,924	99,894,528

*- 11,435 acres sprayed by aircraft in Delaware, Otsego, Herkimer and Oneida Counties for Methods Improvement.

100 acres sprayed by ground equipment on Long Island.

SUMMARY OF GYPSY MOTH SPRAYING - FY 1960

STATE	AIRCRAFT		BLOWER		TOTALS
	Federal Contract (acres)	State & Other (acres)	Federal (acres)	State (acres)	(acres)
Maine	-	775	-	-	775
New Hampshire	-	650	-	-	650
New Jersey	2,412*	-	-	-	2,412
Vermont	-	385	-	-	385
Massachusetts	-	1,800	-	-	1,800
Rhode Island	-	-	-	33,269	33,269
Connecticut	-	20,000	-	-	20,000
New York	11,435	10,581	100	-	22,116
Ttl. for FY-1960	13,847	34,191	100	33,269	81,407

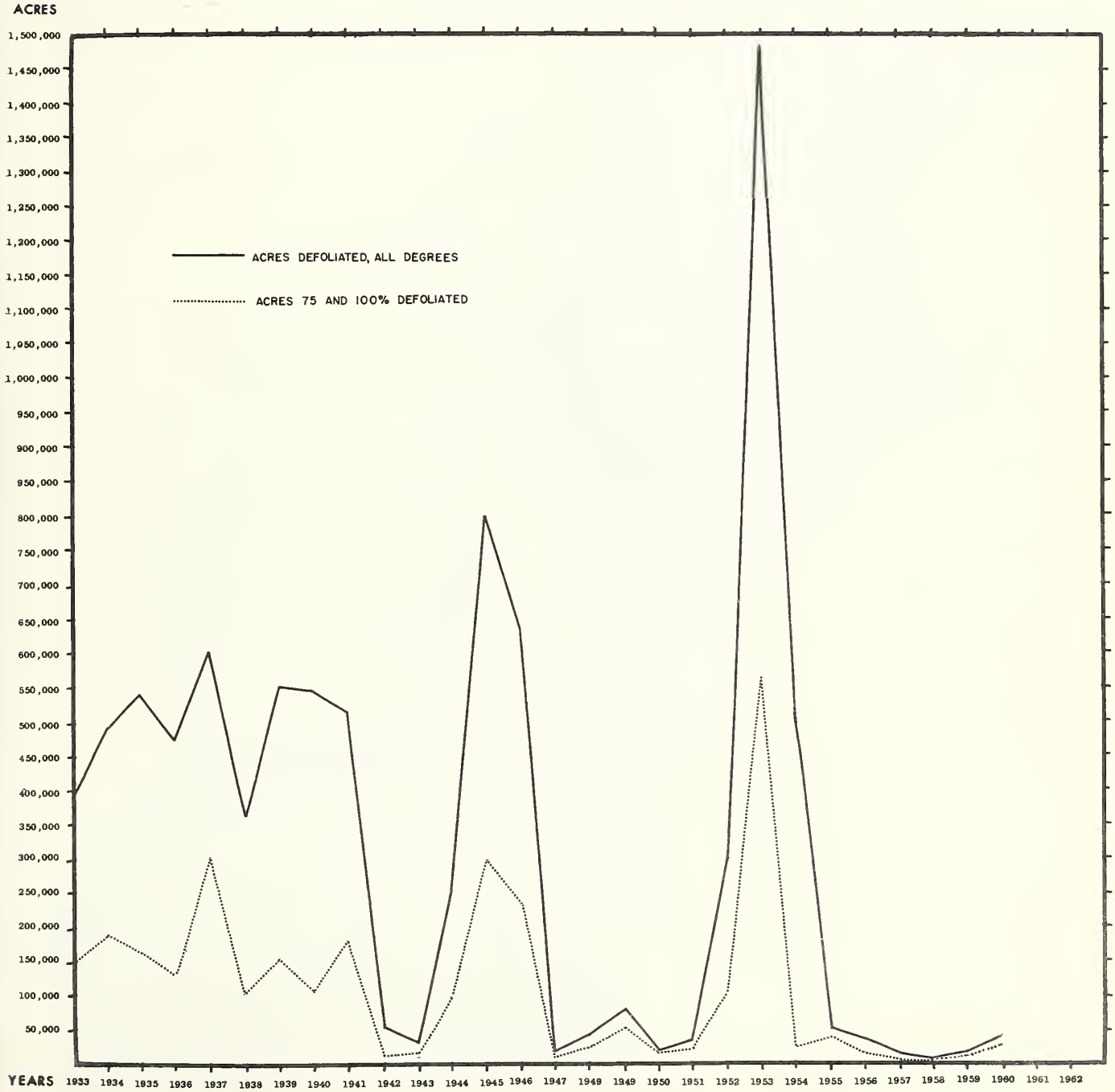
* Sprayed for eradication

[illegible]

GYPSY MOTH

ACRES DEFOLIATED IN NEW ENGLAND AND EASTERN NEW YORK, 1933-1960

75 AND 100%, AND ALL DEGREES

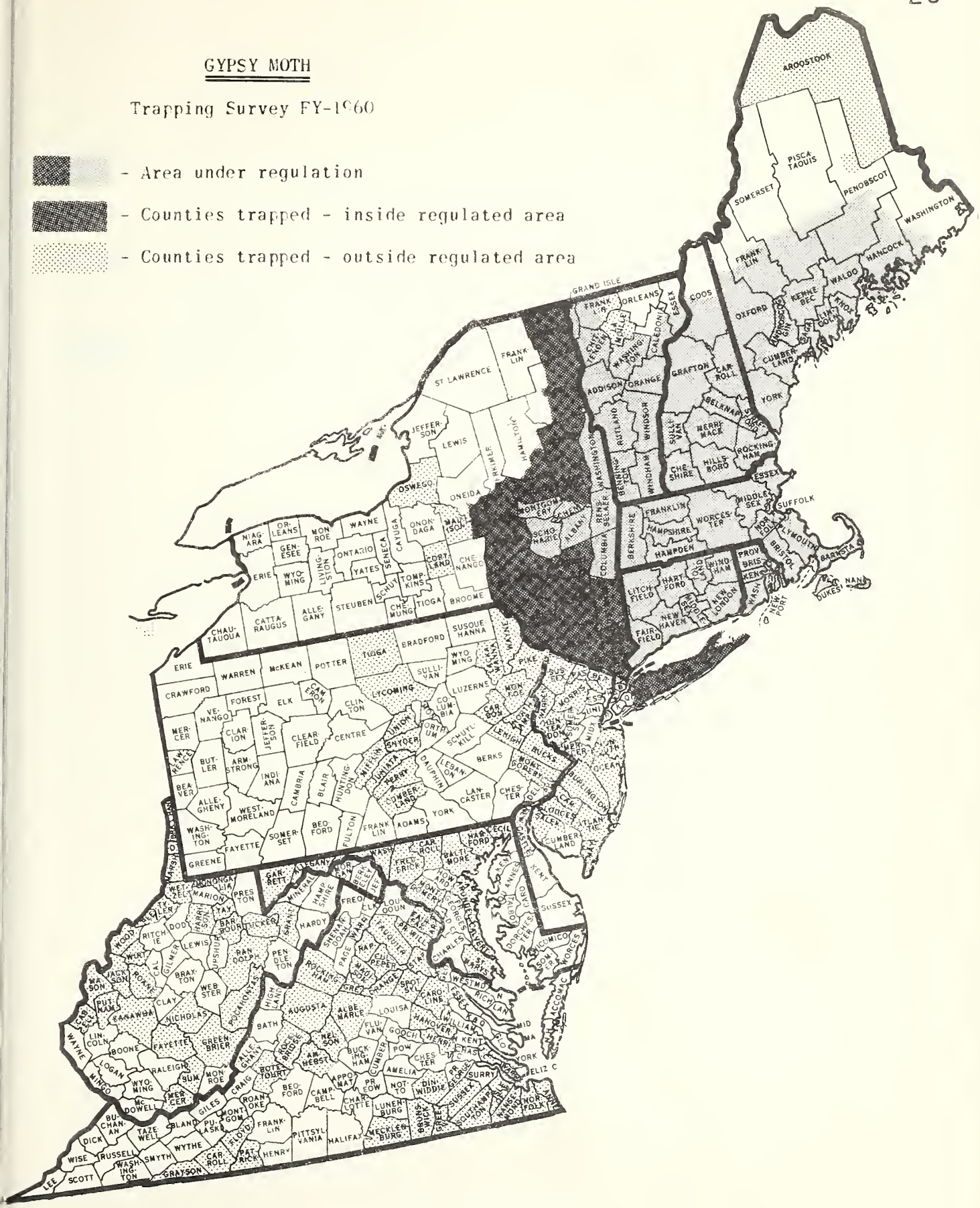


GPO 958935

GYPSY MOTH

Trapping Survey FY-1960

- Area under regulation
- Counties trapped - inside regulated area
- Counties trapped - outside regulated area

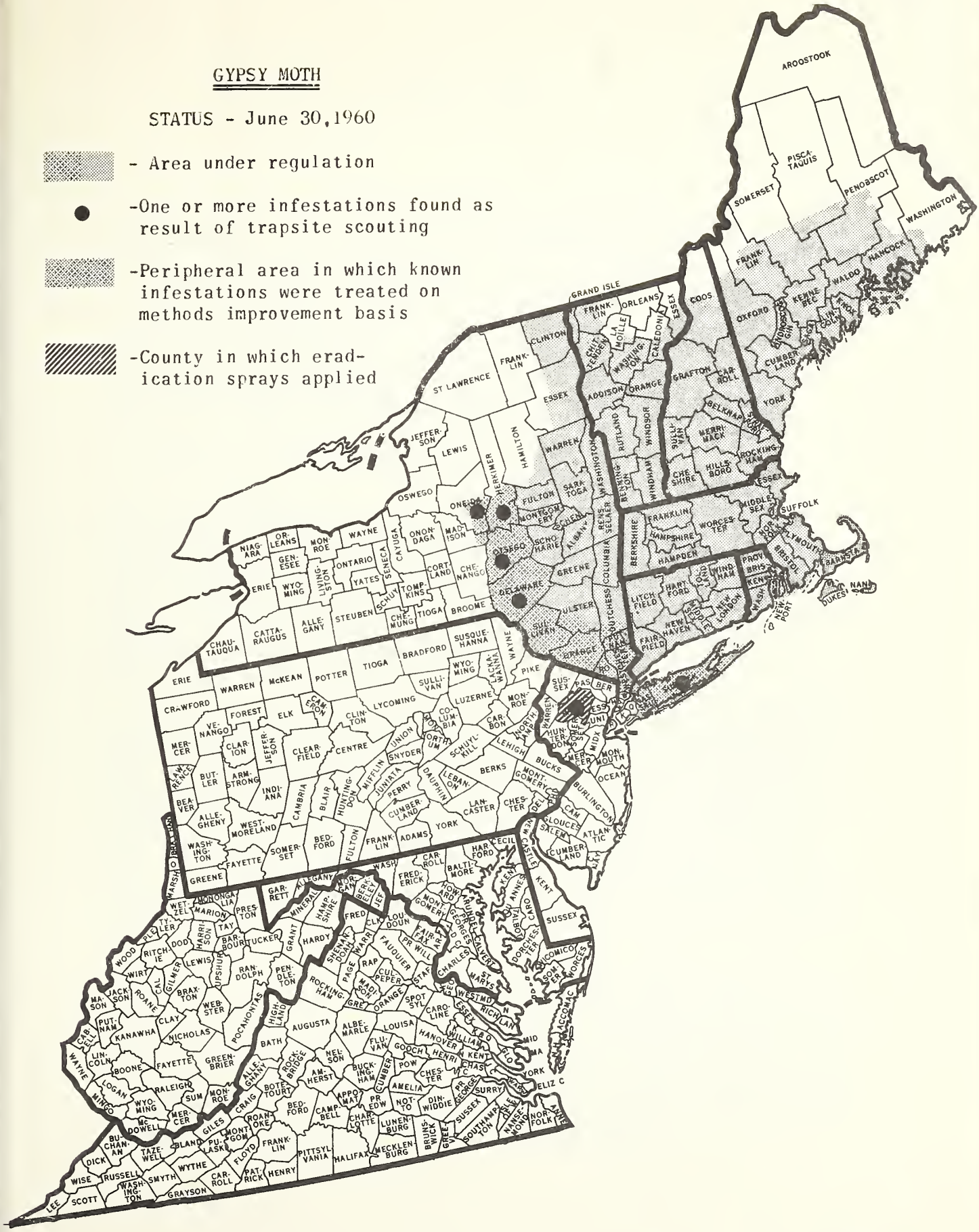


GPO 958935

GYPSY MOTH

STATUS - June 30, 1960

- Area under regulation
- One or more infestations found as result of trapsite scouting
- Peripheral area in which known infestations were treated on methods improvement basis
- County in which eradication sprays applied



GPO 958935

JAPANESE BEETLE

Fiscal Year 1960

Regulatory work is the major year-round program activity in the Eastern Region. Soil, plant products, and certain other materials are restricted in movement to non-regulated destinations under current quarantine regulations. In addition, restrictions are placed on the movement of fruits, vegetables, and transport, including airplanes, during the adult flight season. The summer of 1959 marked the second year during which such requirements were based upon actual hazardous conditions at points of origin rather than on the prior designation of potentially dangerous geographical areas. Inspection and certification services were provided during the year to several thousand commercial and private growers or shippers of regulated articles.

Cooperative surveys were continued in non-regulated areas of the six partially regulated States of Virginia, West Virginia, New York, Vermont, New Hampshire, and Maine. While this survey revealed some scattered light infestations, conditions did not warrant the placement of additional areas under regulation. In New York, cooperative Federal-State control treatments were applied at three such locations totalling 115 acres. In Maine, the State Department of Agriculture applied soil treatments to all locations where beetles were captured outside regulated areas.

During the summer of 1959 there were indications of population buildups in localized spots throughout the Region, some of which were of regulatory significance. The most prominent of these was at the McGuire Air Force Base, Wrightstown, New Jersey. Here, an explosive emergence of beetles during July resulted in several interceptions in Europe of beetles aboard aircraft departing from the McGuire base. Foliage treatments were initiated and a total of 1153 acres of the base was treated with a soil insecticide. Treatments were likewise initiated at numerous other military and commercial airports in the Region as well as at packing sheds, rail sidings, and other shipping and loading points.

During the fiscal year ending June 30, 1960, it has been possible to take advantage of two factors not available in earlier years. First, the decision by the Director of the Division that certification treatments could be made under "direction" as compared to the previous requirement of "observation". The second factor relates to 301.48-6(4) of Federal quarantine No. 48. This permits credit for cultural practices, methods of handling, processing, shipment, etc. as might tend to make the end product qualify for certification.

JAPANESE BEETLE

Fiscal Year 1960

STATE	CERTIFICATION SERVICES				SURVEY			CONTROL (ACRES)	
	Total Service Calls	Estimated Value Products Certified	Plots (Acres)	Bulk Soil Cu.Yds.	Traps in Use	Visually Scouted	Acres of New Infestations Outside Reg. Area	Soil	Foliage
Connecticut	1,077	3,130,528	236.604	553.	-	492.	-	-	13,517
Delaware	667	550,737	-	.6	-	-	-	-	-
Maine	421	129,043	-	-	710	84.	-	5.5	-
Maryland	1,403	2,386,191	4.43	3.43	-	-	-	-	-
Massachusetts	1,407	423,735	21.	1,803.	-	1,801.	-	-	300
New Hampshire	385	44,707	-	35.07	-	4.	-	-	160
New Jersey	2,568	1,909,293	78.228	662.	-	-	-	1,153.	-
New York	1,989	2,014,995	37.	456.	1620	862.	-	115.	-
Pennsylvania	1,776	2,392,464	330.05	1,803.35	-	5,958.5	-	-	-
Rhode Island	527	559,503	224.184	250.	-	143.	-	-	357
Vermont	644	83,606	.2	90.18	69	19.	-	-	-
Virginia	1,639	869,933	29.05	80.4	200	695.	-	2.	2,361
West Virginia	523	414,730	37.9	409.5	158	12,073.	370	-	933
Washington,D.C.	49	5,579	-	-	-	-	-	-	-
Ttl. FY - 1960	15,075	14,915,044	998.646	6,146.53	2,757	22,131.5	370	1,275.5	17,628

JAPANESE BEETLE

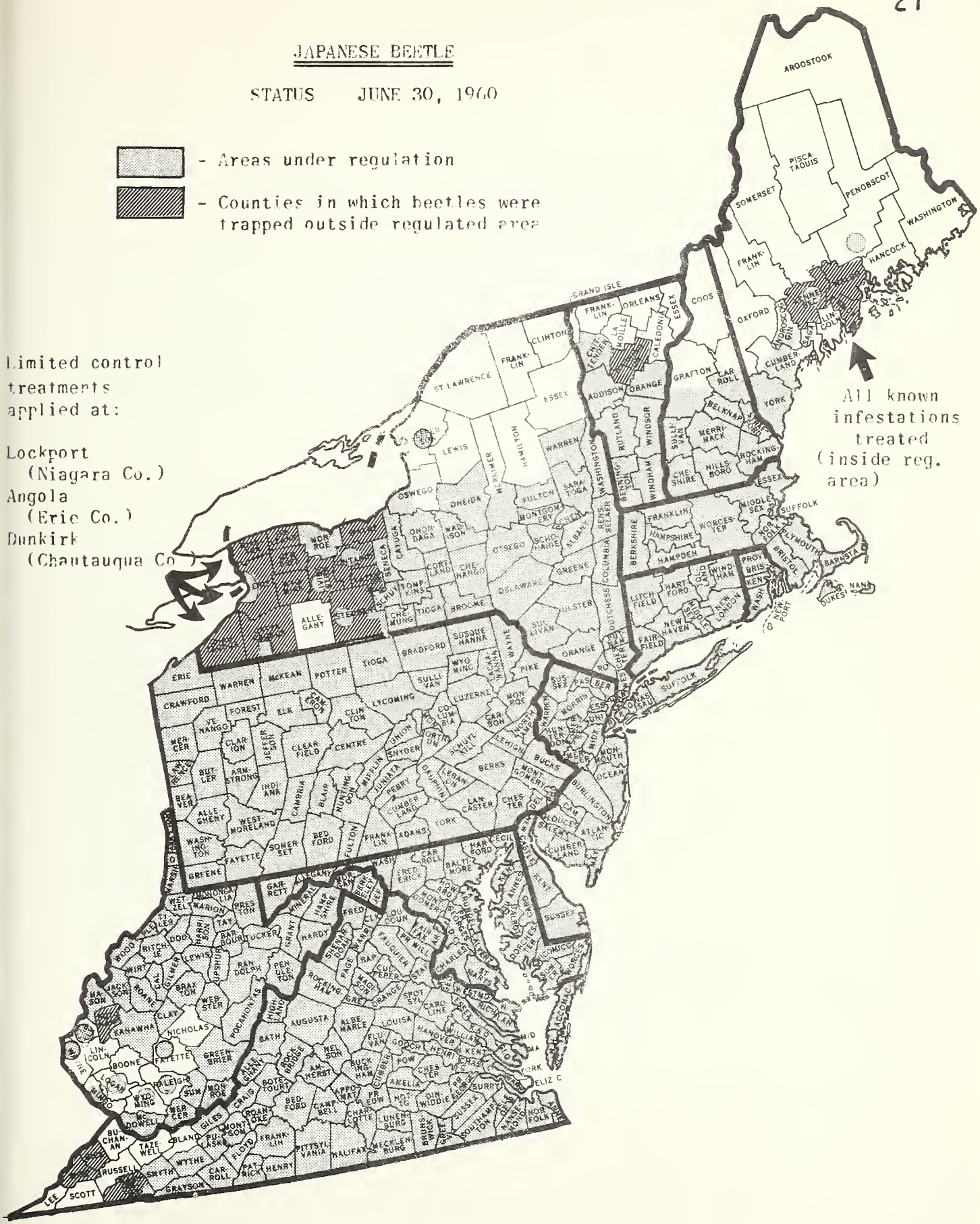
STATUS JUNE 30, 1960

- Areas under regulation
- Counties in which beetles were trapped outside regulated area

Limited control treatments applied at:

Lockport (Niagara Co.)
Angola (Erie Co.)
Dunkirk (Chautauqua Co.)

All known infestations treated (inside reg. area)



GPO 958935

KHAPRA BEETLE

Fiscal Year 1960

Khapra beetle surveys were conducted in all States of this Region in cooperation with State personnel. A total of 1,895 inspections were made and 412 specimens submitted for identification, all negative.

With the cooperation of the Plant Quarantine Division, a close check was maintained on cargoes of foreign ships found infested with khapra beetle. In Baltimore, Plant Pest Control personnel participated in the treatment of a dock area and warehouse where an infested canned tuna fish shipment had been stored. In Wilmington, Delaware an establishment was thoroughly examined following discovery that a portion of an infested shipment of hides unloaded at Philadelphia, Pennsylvania had been transported there by truck. No evidence of khapra beetle was found.

KHAPRA BEETLE INSPECTION SUMMARY

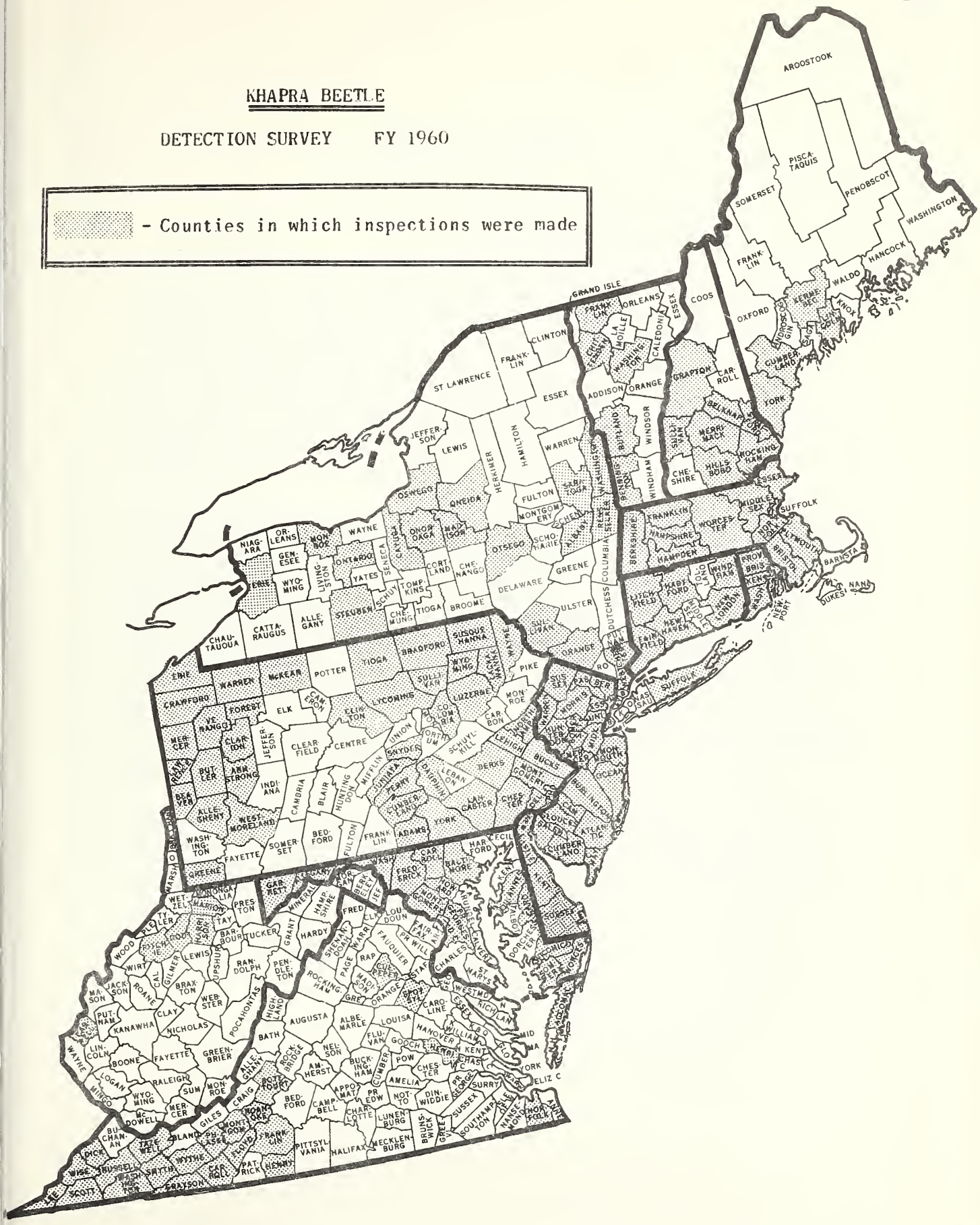
Fiscal Year 1960

STATE	INSPECTIONS			SPECIMEN COLLECTIONS SUBMITTED FOR IDENTIFICATION	INFESTED SITES THIS PERIOD
	INITIAL	REPEAT	TOTAL		
Connecticut	13	-	13	7	-
Delaware	32	1	33	7	-
Maine	5	6	11	9	-
Maryland	184	12	196	15	-
Massachusetts	80	6	86	-	-
New Hampshire	14	9	23	19	-
New Jersey	34	239	273	8	-
New York	98	44	142	8	-
Pennsylvania	764	161	925	255	-
Rhode Island	49	6	55	-	-
Vermont	14	0	14	16	-
Virginia	24	73	97	61	-
W.Virginia	14	4	18	5	-
D. C.	9	-	9	2	-
Ttl. F.Y.-1960	1,334	561	1,895	412	-
Ttl. from Beginning of Program	2,628	884	3,512	1,121	-

KHAPRA BEETLE

DETECTION SURVEY FY 1960

▨ - Counties in which inspections were made



SOYBEAN CYST NEMATODE

Fiscal Year 1960

In the Eastern Region, soybean cyst nematode infestation is known to occur only in the counties of Nansemond, Isle of Wight, and Southampton, in Virginia. Cooperative symptom surveys conducted in 27 southern and eastern counties of Virginia during the summer of 1959 were negative, but delimiting surveys in the vicinity of the infested area produced 92 additional infestations totalling 6,359 acres. Since the beginning of the program, 144 properties in Virginia representative of 9,458 acres have been found infested. Surveys conducted in Delaware, Maryland, and New Jersey proved negative.

The State of Virginia was placed under Federal quarantine on August 21, 1959 with regulatory action limited to infested properties. A paralleling State quarantine was issued and made effective the same date. Cooperative Federal-State regulatory measures govern the movement of farm machinery, equipment, and other products and articles considered hazardous from the standpoint of spreading soybean cyst nematodes. Certain products such as peanuts grown on infested land were permitted to move to processing plants under permit, in accordance with conditions and safeguards set forth in written dealer-carrier agreements. Air cleaning units provided by the Virginia Department of Agriculture and Immigration were employed in the cleaning of farm machinery and equipment moved from infested properties.

The Virginia Agricultural Experiment Station at Holland furnished personnel and equipment to facilitate various program studies and experiments. This cooperation has been of great assistance in arranging for the safe movement of peanuts and certain other crops presenting a hazard of spreading infestation.

SOYBEAN CYST NEMATODE

Fiscal Year 1960

STATES.	SOIL SURVEY		PLANT INSPECTION		INFESTATIONS CONFIRMED	
	Properties	Acres	Properties	Acres	Properties	Acres
Delaware	149	10,194	-	-	-	-
Maryland	105	1,921	-	-	-	-
New Jersey	82	2,773	1,077	21,302	-	-
Virginia	805	36,763	7,392	124,647	92	6,359
Total FY 1960	1,141	51,651	8,469	145,949	92	6,359
Total from beginning of program	3,101	89,454	12,192	311,470	144	9,458

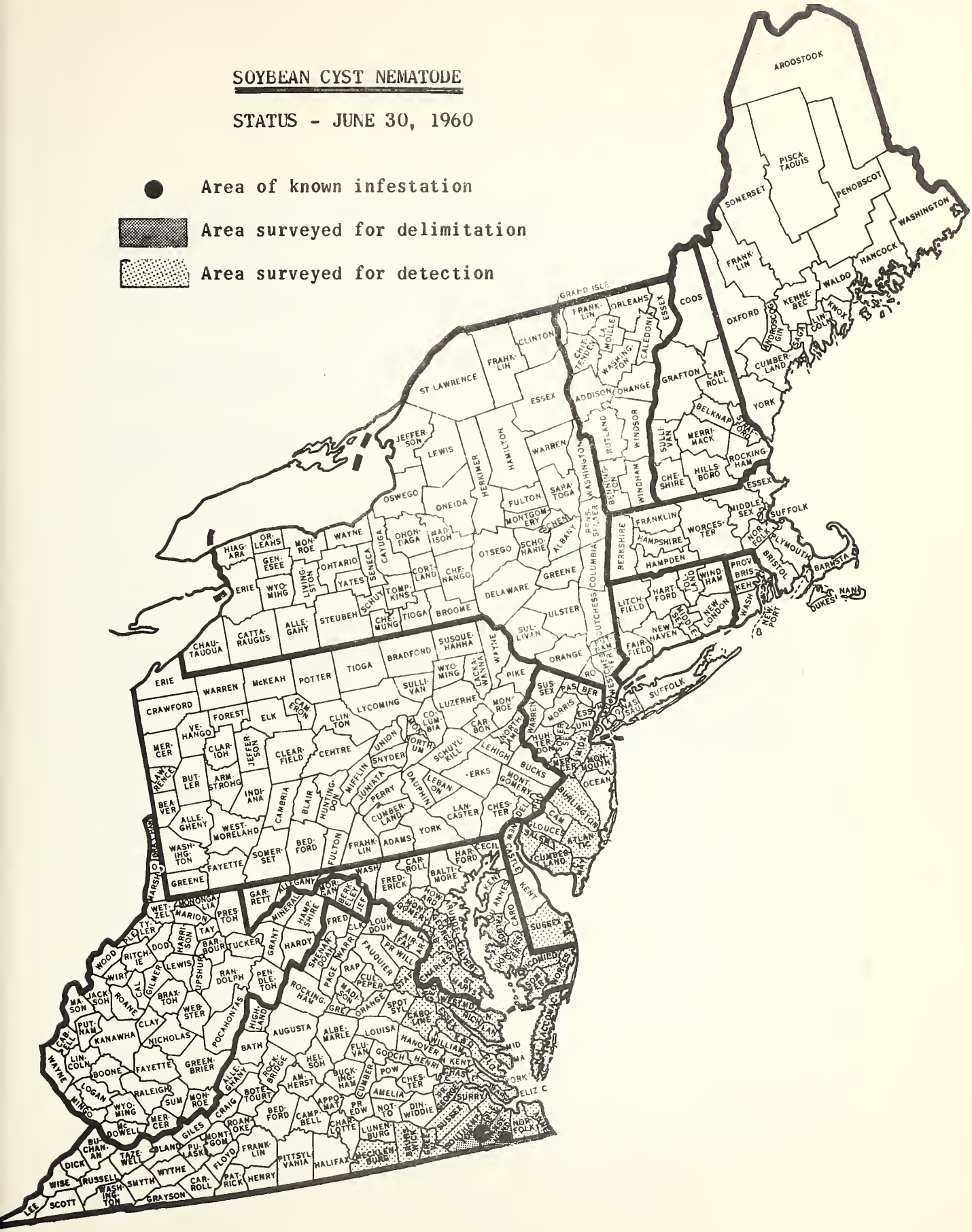
SOYBEAN CYST NEMATODE

STATUS - JUNE 30, 1960

● Area of known infestation

Area surveyed for delimitation

Area surveyed for detection



WHITE-FRINGED BEETLE

Fiscal Year 1960

It has been six years since the white-fringed beetle was discovered at Vineland, New Jersey and five years since the first treatment with dieldrin was applied. Surveys for adult beetles during the summer of 1959 and for larvae and pupae during the spring of 1960, at the time of soil preparation, were negative. Eradication at this point looks promising.

Surveys were conducted in four New Jersey counties and 26 counties in southern Virginia.

In New Jersey 3/4 of an acre was treated with granular dieldrin in order to comply with State quarantine requirements for certification of plant material for shipment.

DETECTION SURVEY SUMMARY

STATES	SITES INSPECTED		ACRES OF NEW INFESTATION					
			Nursery	Farmland		Non-Farmland		Total
	Nursery	Other		Tilled	Un-tilled	Wood-land	Ind. & City	
New Jersey	-	233	-	-	-	-	-	-
Virginia	-	592	-	-	-	-	-	-
Ttl. Fiscal Year 1960	-	825	-	-	-	-	-	-
Ttl. from beginning of Program	6	1,538	-	30	20	-	-	* 50

*Considered eradicated

CONTROL TREATMENTS

White-Fringed Beetle — Fiscal Year 1960

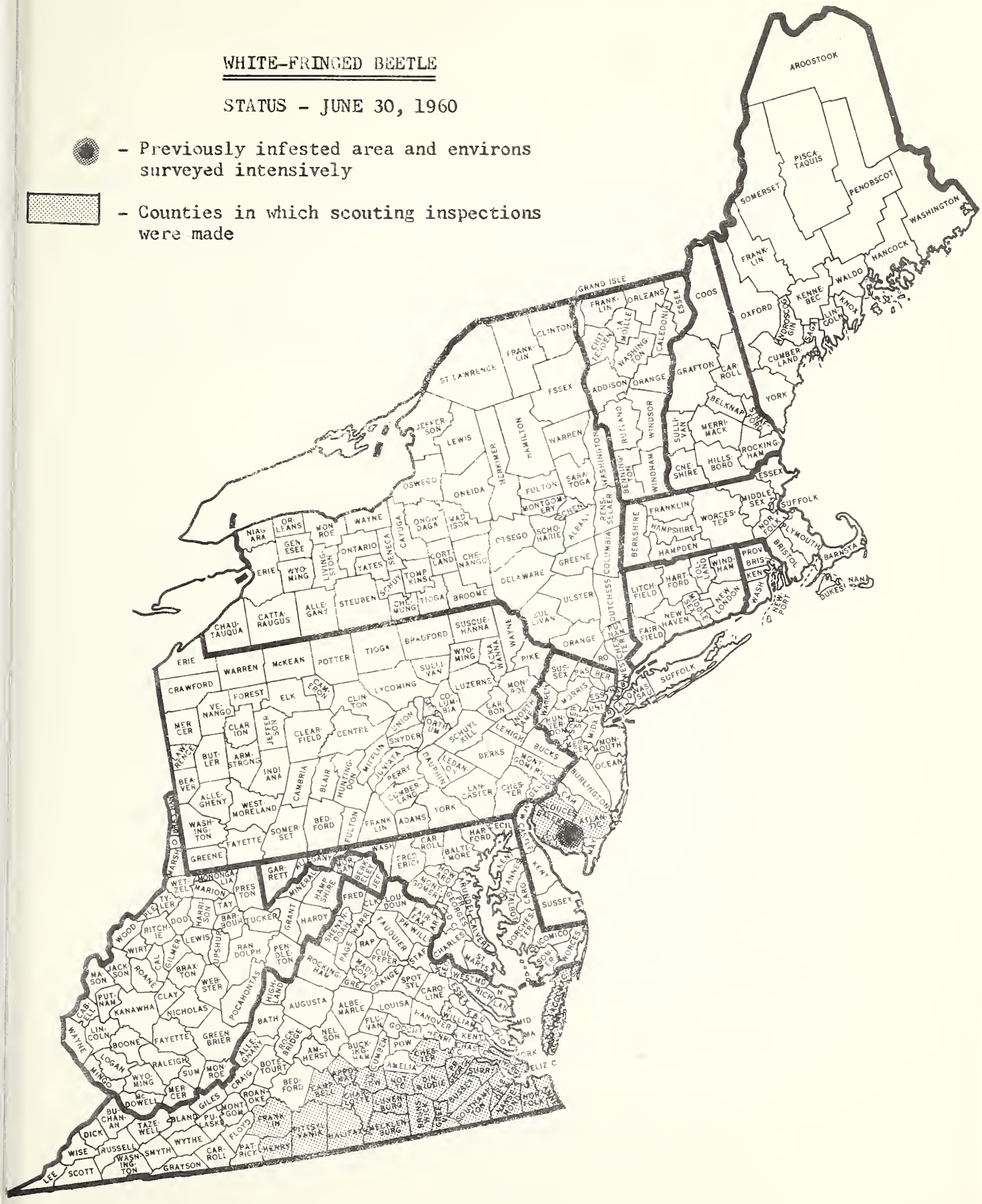
STATE	ACRES TREATED WITH INSECTICIDES (First Treatment)							ACRES OF RE-TREAT-MENT
	NURSERY	FARMLAND			NON-FARMLAND		FOLIAGE	
		Ground Equipment		Aircraft	Ground Equip-ment	Air-craft		
		Broad-cast Insect	With Ferti-lizer					
New Jersey	-	-	-	-	-		-	.75
Ttl. FY-1960	-	-	-	-	-		-	.75
Ttl. from beginning of Program	-	155.3	-	-	-	154	77	82.75

WHITE-FRINGED BEETLE

STATUS - JUNE 30, 1960

- Previously infested area and environs surveyed intensively

- Counties in which scouting inspections were made



GPO 958935

WITCHWEED (Striga asiatica)

Fiscal Year 1960

Witchweed is not known to occur in the Eastern Region. Limited detection surveys for this parasitic plant were conducted this fiscal year in corn growing areas, environs of pickle factories receiving cucumbers from the infested areas of North and South Carolina, railroad sidings, truck stops and loading sites. Most of these observations were made in conjunction with other regular activities and revealed no evidence of infestation. States involved included Maine, Maryland, New Hampshire, New Jersey, Pennsylvania, Vermont, Virginia and West Virginia.

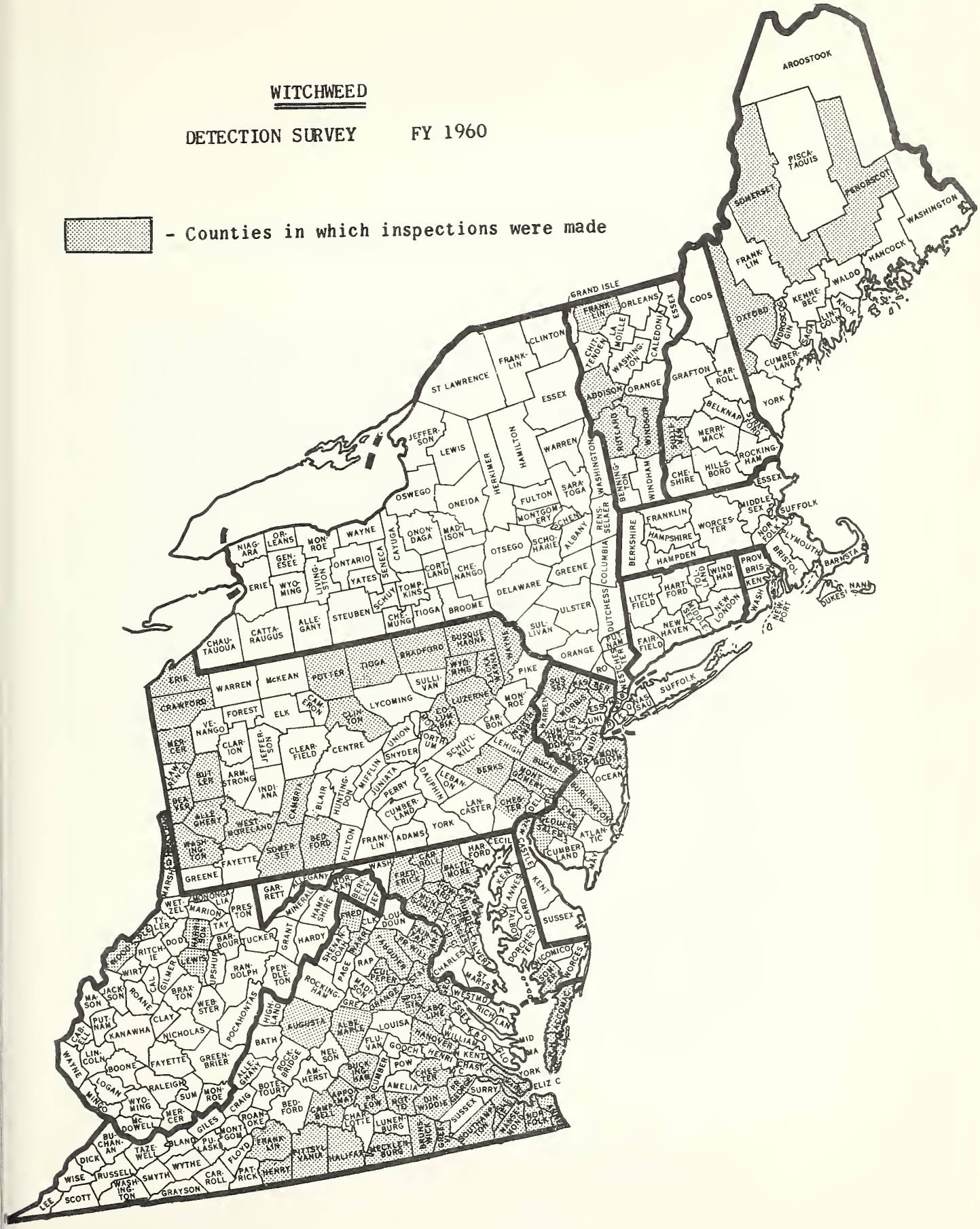
WITCHWEED SURVEY

STATE	SURVEY		INFESTATIONS FOUND	CONTROL
	Properties	Acres		
Maine	8	77	-	-
Maryland	149	1306	-	-
New Hampshire	6	160	-	-
New Jersey	501	5246	-	-
Pennsylvania	289	1547	-	-
Vermont	65	1363	-	-
Virginia	938	9063	-	-
W. Virginia	51	102	-	-
Total FY 1960	2007	18,864	-	-
Total from beginning of Program	4,188	41,013	-	-

WITCHWEED

DETECTION SURVEY FY 1960

- Counties in which inspections were made



GPO 958935

COOPERATIVE ECONOMIC INSECT DETECTION

Fiscal Year 1960

Formal cooperative survey agreements are in force by five of the 13 states in the Region. In the remaining 8 states, a clearing house representative also has been designated to coordinate survey reports. Meetings were held in each of the states to review plans for conducting the survey program. Particular attention has been given to the possibilities of increasing the detection phase of this work including the operation of black light traps at strategic points.

The annual fall European corn borer survey was discontinued in the 6 New England states; whereas, reporting from the 7 remaining states was encouraged. A total of 310 weekly reports was received from the 13 states within the region. Annual summaries of insect conditions were received from 6 states.

The first annual Cooperative Economic Insect Survey workshop was held during January with participants attending from 10 of the 13 states of the Region.

STATE	CLEARING HOUSE	SURVEY ENTOMOLOGIST
Connecticut	Mr. J. Peter Johnson Assistant Entomologist P. O. Box 1106 Conn. Agricultural Experiment Station New Haven 4, Conn.	
Delaware	Dr. Dale F. Bray, Head Department of Entomology University of Delaware Newark, Delaware	Dr. Paul Burbutis Asst. Prof. Entomology University of Delaware Newark, Delaware
Maine	Dr. G. W. Simpson, Head Department of Entomology University of Maine Orono, Maine	
Maryland	Mr. T. L. Bissell Extension Entomologist University of Maryland College Park, Maryland	Mr. Wallace C. Harding, Jr. Extension Instr. Entomology University of Maryland College Park, Maryland
Massachusetts	Dr. Wm. D. Tunis Extension Entomologist Dept. of Ent. & Plant Path. Amherst, Massachusetts	
New Hampshire	Dr. J. G. Conklin Prof. of Economic Entom. University of N. H. Durham, N. H.	
New Jersey	Dr. B. B. Pepper Prof. of Entomology Rutgers University New Brunswick, N. J.	
New York	Dr. A. A. Maka Entomology Department Cornell University Ithaca, New York	
Pennsylvania	Mr. J. O. Pepper Prof. Ext. Entomology Pa. State University State College, Pa.	

STATE	CLEARING HOUSE	SURVEY ENTOMOLOGIST
Rhode Island	Dr. F. L. Howard, Head Dept. Plant Pathology & Entomology University of R. I. Kingston, Rhode Island	Dr. Harry L. Hansen Res. Prof., Plant Pathol- ogy & Entomology University of R. I. Kingston, Rhode Island
Vermont	Mr. John Scott, Director Div. Plant Pest Control State Dept. of Agriculture Montpelier, Vermont	
Virginia	Dr. J. O. Rowell Extension Entomologist Virginia Polytechnic Inst. Blacksburg, Virginia	Mr. Wallace Tarpley Asst. Ext. Survey Entomol- ogist Virginia Polytechnic Inst. Blacksburg, Virginia
West Virginia	Dr. C. K. Dorsey Prof. of Entomology West Virginia University Morgantown, W. Virginia	Mr. W. H. Gillespie Survey Entomologist State Dept. of Agriculture Brooks Hall West Virginia University Morgantown, W. Virginia

PLANT PEST CONTROL

COOPERATIVE PROGRAMS

MEXICO REGION

ANNUAL REPORT

FISCAL YEAR

1960

United States Department of Agriculture
Agricultural Research Service
Plant Pest Control Division

PLANT PEST CONTROL COOPERATIVE PROGRAMS

In accordance with our Memorandum of Understanding with Mexico, the Plant Pest Control Division of the United States Department of Agriculture and the Defensa Agrícola of the México Department of Agriculture and Livestock cooperated in the preparation of work plans for the execution and accomplishment of the Mexican Fruit Fly, Citrus Blackfly, Pink Bollworm and Khapra Beetle programs of the Mexico Region.

I N D E X

- -

MEXICAN FRUIT FLY

In West Mexico, fly traps were operated in the principal fruit-growing areas of northern Baja California throughout the year. Slightly in excess of 2,000 traps were baited and inspected once a week, resulting in the recovery of five Mexican fruit flies (A. ludens) in the City of Tijuana, B. C., on the following dates: August 1, 1959; October 6, 1959; June 20, 22, and 28, 1960.

Locally grown fruits were examined for larval infestation in conjunction with the trapping operations. The results were negative.

An intensive spray program was conducted at 21-day intervals from July 1 to November 30, 1959, by which time it is believed eradication was effected. The spray program was again initiated immediately after trapping the first fly in June, 1960 and will be continued at 21-day intervals for at least three applications from date of trapping the last fly.

As in the past, highway, railway, airport, and maritime inspections were constantly maintained at strategic locations to prohibit the introduction of quaratine products, as well as untreated fruits, from the infested areas of Mexico into the free area of the Northwest. Inspections were conducted in the fruit markets in the principal cities for contraband shipments from infested areas.

Two fumigation chambers are operated, one at the Benjamin Hill, Sonora road station, the other at the port of Ensenada, B. C., without cost to the shipper for the treatment of host fruits of the Mexican fruit fly.

This program has been effective in detecting and eradicating light infestations of A. ludens in northwest Mexico for the past six years.

MEXICAN FRUIT FLY SUMMARY F. Y. 1960

STATE	VISUAL INSPECTION		TRAPPING					Host Plants Sprayed	Prop. Sprayed
	Properties Inspected	Prop. Infested	Prop. Trapped	Traps In Use	Traps Servic-ings	Prop. Infested	Flies Caught		
Baja California	177	0	983	2,086	90,270	5	5	127,964	29,207
Sonora	0	0	43	133	2,522	0	0	0	0
TOTALS	177	0	1,026	2,219	92,792	5	5	127,964	29,207

MEXICAN FRUITFLY PROGRAM

PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☒ ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
MEXICAN FRUIT FLY	P PC MEXICO REGION	M. F. Clore	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVISION								
Headquarters	10,522	200	490	489	489			12,190

* Column A: List entries in the following order:

1. PLANT PEST CONTROL DIVISION units. Name states. Include only direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

2. Sub-total for all PPC funds included in (1).

3. OTHER ORGANIZATIONS. Name organizations by States. Include only direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure, or measurable cash expenditure.

4. Sub-total for all OTHER ORGANIZATIONS, funds included in (3).

5. Totals of PPC and OTHER ORGANIZATIONS, funds included in (2) plus (4).

6. CONTRIBUTED SERVICES. Name organizations by State. Limit to services incidental to other activities for which only an estimated value is available.

7. Total of CONTRIBUTED SERVICES, items included in (6) only.

8. GRAND TOTAL of (5) and (7) entries.

PPC Form 1-10
Feb 1959

PROGRAM COST DISTRIBUTION
[ ] ESTIMATE [x] ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
MEXICAN FRUIT FLY	P PC MEXICO REGION	W. F. Clark	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVISION								
Headquarters	10,582	200	420	[illegible]	489			12,120
West Mexico	12,0[illegible]	1,17[illegible]	10,11[illegible]	[illegible]3	1[illegible],200			54,214
East Mexico	-	-	-	-	-			-
(2) Sub-total	[illegible],007	[illegible],017	10,6[illegible]	[illegible],424	1[illegible],6[illegible]			66,404
(3) OTHER ORGANIZATIONS								
Federal - West Mexico		204						204
Defense Agricole - West	334				5,12[illegible]			5,4[illegible]
Defense Agricole - East				400				400
(4) Sub-total	334	204		400	[illegible],12[illegible]			[illegible],063
(5) Total PPC & Other	22,[illegible]41	[illegible],27[illegible]	10,6[illegible]	[illegible],[illegible]24	23,[illegible]14			72,467
(6) CONTRIBUTED SERVICES								
(7) Total Contrib. Services	-	-	-	-	-			-
(8) GRAND TOTAL	22,[illegible]41	[illegible],27[illegible]	10,6[illegible]	[illegible],[illegible]24	23,[illegible]14			72,467

* Column A: List entries in the following order:

1. PLANT PEST CONTROL DIVISION units. Name states. Include only direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

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PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☐ ACTUAL

NAME OF PROGRAM

SOURCE OF CASH AND EQUIVALENT (A)	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	[illegible] (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)

CITRUS BLACKFLY

Surveys continued throughout the year in the free zones and also in the chemical control and biological control zones in Mexico. In the free areas of northern Sonora and Baja California, no infestations were found. The only infestation close to the United States-Mexico border was a light infestation found in Monterrey, N. L., which was immediately eradicated. In the Municipio of Allende, N. L., approximately 130 miles from the Texas-Mexico border, three moderately heavy and rather extensive infestations were found. Delimitation and eradication of the infestations were in good progress at the close of the fiscal year. Other light infestations were found in the State of Nuevo Leon and in the vicinity of Hermosillo, Sonora and were eradicated or in the process of eradication.

All chemical control operations were accomplished and supervised by the Defensa Agrícola.

The biological control zone in southern Tamaulipas was extended from Oyama to the Nuevo León-Tamaulipas state line on the National Highway toward Monterrey. Blackfly has been generally controlled in this zone during the year. Apparently some of the parasites are becoming better established in this zone since, during the year, fewer liberations were necessary and considerable numbers were captured and shipped to other states for liberation. In West Mexico, in the State of Sonora south of Hermosillo, surveys indicate good control by parasites while in some parts of the State of Sinaloa some build-up of citrus blackfly has been reported due to low parasitization. Anticipated increased parasite release is expected to bring the trouble areas under control.

The operation of quarantine stations continued to intercept host materials moving from infested to free zones and from biological to chemical control zones.

Citrus movement to the United States for export was supervised to prevent the introduction of host material.

CITRUS BLACKFLY SUMMARY F. Y. 1960

STATE	INSPECTIONS By Location		INFESTATIONS By Location		CONTROL APPLICATIONS							
					Property Sprayed				Trees Sprayed			
	Prop. Number	Trees Number	Prop. Number	Trees Number	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Nuevo Leon	8,674	753,032	228	4,758	306	346	250	217	79,458	88,301	63,158	48,706
Tamaulipas	7,570	115,022	24	91	9	6	1	2	479	819	247	232
Sonora	3,567	258,555	2	10	39				892			
Baja Calif.	2,314	12,471										
TOTALS	22,125	1,139,080	254	4,859	354	352	251	219	80,829	89,120	63,405	48,938

TRUCK CERTIFICATION - CITRUS FRUIT EXPORTED THROUGH UNITED STATES F. Y. 1960

MONTH	PACKING SHED LOCATION BY STATES					
	NUEVO LEON		TAMAULIPAS		SAN LUIS POTOSI	
	Number Trucks	Number Standard Boxes	Number Trucks	Number Standard Boxes	Number Trucks	Number Standard Boxes
September	10	3,268				
October	699	246,784				
November	128	39,713				
December	57	13,887			2	514
January	30	7,526			11	3,150
February	76	26,843				
March	124	39,755				
April	92	28,953	6	1,051		
May	88	27,882				
June	19	6,550				
T O T A L S	1,323	441,161	6	1,051	13	3,664

CITRUS BLACKFLY PROGRAM

PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☒ ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
CITRUS BLACKFLY	PPC MEXICO REGION	W. F. Clark	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)

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7. Total of CONTRIBUTED SERVICES, items included in (6) only.

8. GRAND TOTAL of (5) and (7) entries.

PPC Form 1-10
Feb 1959

PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☒ ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
CITRUS BLACKFLY	PPC MEXICO REGION	[illegible]	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVISION								
Headquarters	[illegible]	100	2,634		100			10,457
West Mexico	8,000	4,[illegible]	[illegible]		14,787			35,001
East Mexico	10,570	6,269	[illegible]		1,711			67,493
(2) Sub-Total	26,643	10,[illegible]2	52,65[illegible]		16,5[illegible]			113,[illegible]51
(3) REPUBLIC OF MEXICO								
Defensa Agricola - West	1,000	550	3,700	3,[illegible]00	16,645			25,695
Defensa Agricola - East	5,000	400	50,000	43,744	20,000			11[illegible],144
Federal - West Mexico		304						304
Industry - Citrus Packers East Mexico					1,[illegible]7[illegible]			1,[illegible]7[illegible]
(4) Sub-Total	6,000	1,254	53,70[illegible]	47,544	3[illegible],583			147,021
(5) TOTAL PPC & Other Funds	32,643	12,206	113,35[illegible]	47,544	55,121			260,[illegible]72
(6) CONTRIBUTED SERVICES								
Industry	-	-	-	-	-			-
(7) Total Contrib. Services	-	-	-	-	-			-
(8) GRAND TOTAL	32,643	12,206	113,359	47,544	55,121			260,[illegible]72

* Column A: List entries in the following order:

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PPC Form 1-10
Feb 1959

KHAPRA BEETLE

No khapra beetle infestations were found in Mexico during the fiscal year 1960, following a systematic program of surveys and inspections conducted in 12 states and the Federal District of Mexico.

Emphasis was placed on type I and II properties in the states of Baja California and Sonora and the Cd. Juárez district adjacent to El Paso, Texas where additional infestations were found in fiscal year 1960. As many type III properties in Baja California were inspected as time permitted. All properties in the states of Jalisco, Michoacán, Guanajuato, Querétaro, México, Tamaulipas, Nuevo León, Coahuila, Durango, Chihuahua and México, D. F. that received grain from infested warehouses in Guadalajara, Jalisco were given initial and repeat inspections, with negative results. Regular 90-day inspections were given to all properties fumigated in fiscal year 1959 at Guadalajara, Jalisco; San Luis, R. C., Sonora; Mexicali, B. C.; and Cd. Juárez, Chihuahua. All properties with a history of khapra beetle infestation since the beginning of the cooperative program in 1956 were reinspected at regular 180-day intervals.

During the year, a total of 3,900 inspections were made and of these 1,699 were initial and 2,201 repeat. Specimen collections submitted for identification totalled 1,134. No positive determinations were received.

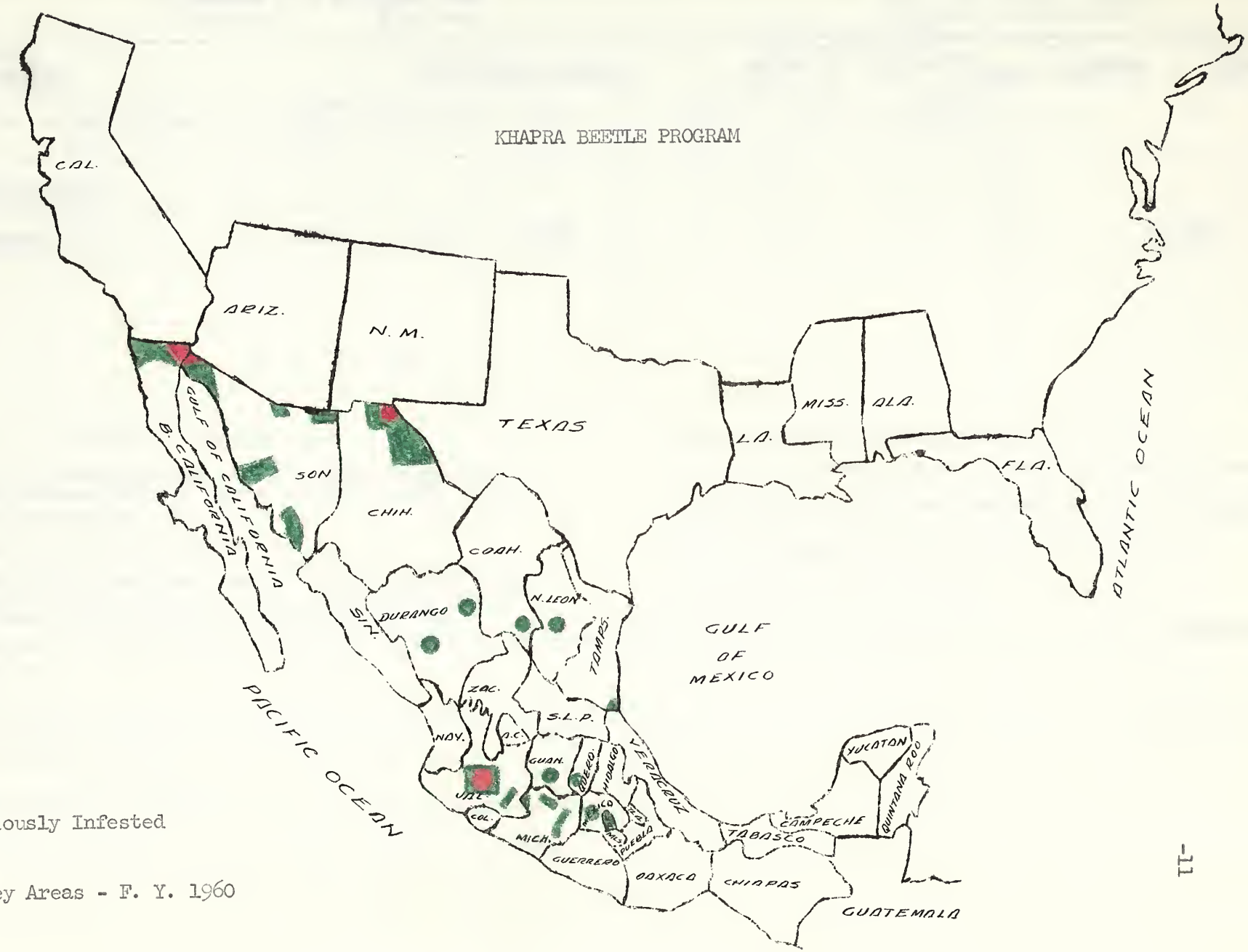
Rigid quarantine enforcement was maintained. Periodic checks were made on used sack dealers in the Mexicali District for compliance with treatment requirements.

The standard methyl bromide fumigation was given all grain moving from Baja California area to the interior of Mexico after it was loaded in railroad cars.

KHAPRA BEETLE INSPECTION SUMMARY F. Y. 1960

STATE	INSPECTIONS			Specimen Collections Submitted for Ident.	Sites Found Infested	Sites Found Infested fr. Beg. Program	Sites Yet to be Treated	Volume Infested from Beginning Program	Volume Infested Yet to be Treated
	Initial	Repeat	Total						
Baja Calif.	771	1,775	2,546	566		78		16,460,862	
Sonora	159	230	389	175		2		304,643	
Jalisco	1	43	44	65		5		7,954,180	
Michoacan	6	7	13	34					
Queretaro	1	1	2	10					
Chihuahua	760	125	885	118		2		157,806	
Guanajuato	1	1	2	5					
Nuevo Leon		1	1	9					
Coahuila		3	3	42					
Tamaulipas		1	1	16					
Mexico		2	2	10					
Mexico, D. F.		9	9	53					
Durango		3	3	31					
T O T A L S	1,699	2,201	3,900	1,134	0	87	0	24,877,491	0

KHAPRA BEETLE PROGRAM



PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☒ ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
KHAPRA BEETLE	PPC MEXICO REGION	W. F. Clore	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVISION								
Headquarters	5,482	100	1,245					6,827

* Column A: List entries in the following order:

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PPC Form 1-10
Feb 1959

PROGRAM COST DISTRIBUTION

[ ] ESTIMATE [X] ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM: KRAUTA [illegible]TLE

OPERATING UNIT: PPC MEXICO REGION

SIGNATURE: W. F. Clark

DATE: 1/24/61

FISCAL YEAR: 1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVI[illegible]								
[illegible]dquarters	[illegible],4[illegible]	100	1,[illegible]					6,827
[illegible] Mexico	10,31[illegible]	[illegible],013	27,[illegible]		3,100			4,[illegible]472
[illegible]	1,000	2,020	[illegible],6[illegible]					12,7[illegible]2
(2) [illegible]	1[illegible],201	11,203	3[illegible],[illegible]7		3,1[illegible]			6[illegible],051
(3) [illegible] OF MEXICO								
Defensa Agricola - [illegible]est	[illegible]00	134			6,[illegible]0			7,33[illegible]
Defensa Agricola - East		324						324
Patronatos - East Mexico			1[illegible]					1[illegible]
Federal - West Mexico		204						204
(4) [illegible]-Total	[illegible]	[illegible]2	146		[illegible]			[illegible],013
(5) [illegible] PPC [illegible]	17,201	11,[illegible]	3[illegible],0[illegible]		[illegible],0[illegible]			77,0[illegible]
(6) CO[illegible]								
(7) Total Contrib. Services	-	-	-	-	-			-
(8) [illegible] TOTAL	17,201	11,[illegible]	3[illegible],0[illegible]3	-	[illegible],0[illegible]			77,0[illegible]

* Column A: List entries in the following order:

1. PLANT PEST CONTROL DIVISION units. Name states. Include only direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure.

2. Sub-total for all PPC funds included in (1).

3. OTHER ORGANIZATIONS. Name organizations by States. Include only direct appropriation, allotments from other sources, services and supplies for which there is an actual cash expenditure, or measurable cash expenditure.

4. Sub-total for all OTHER ORGANIZATIONS, funds included in (3).

5. Totals of PPC and OTHER ORGANIZATIONS, funds included in (2) plus (4).

6. CONTRIBUTED SERVICES. Name organizations by State. Limit to services incidental to other activities for which only an estimated value is available.

7. Total of CONTRIBUTED SERVICES, items included in (6) only.

8. GRAND TOTAL of (5) and (7) entries.

PPC Form 1-10
Feb 1959

SOURCE OF CASH AND EQUIVALENT * (A)	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(A) [illegible]								
[illegible]								
[illegible]								
[illegible]								
(B) [illegible]								
(C) [illegible]								
[illegible] - [illegible]								
[illegible] - [illegible]								
[illegible]								
(D) [illegible]								
(E) [illegible]								
(F) [illegible]								
(G) [illegible]								
(H) [illegible]								

PINK BOLLWORM

Control and suppressive measures continued in force in the states of Tamaulipas, Nuevo León, Coahuila, Durango and Chihuahua of East Mexico. In West Mexico, in the states of Baja California, Sonora, and Sinaloa, the pink bollworm is not now known to be present. Eradication and control measures in the Culiacán, Sinaloa zone, where pink bollworms were found in 1957, have been in effect since the initial finding. The third and final year of the eradication program will be completed in September 1960, if inspections fail to reveal further infestations.

Surveys in the regulated and free areas of East and West Mexico were carried on throughout the year. Good coverage was obtained through the employment of established procedures, namely: gin trash, lint cleaner, debris, bloom and green boll inspections and the use of Argon light traps. In the Mexicali Valley of Sonora and Baja California, adjacent to and near the infested area of Arizona, surveys were stepped up and some cultural control preventive measures were put into effect.

Inspection stations at strategic locations continued in operation to prevent the entry of host materials into free areas from infested zones.

Established control and regulatory measures were maintained and chemical control was applied in the more heavily infested areas, principally in the Laguna region of the states of Coahuila and Durango and in some fields in the states of Chihuahua and Tamaulipas. In the Laguna region and in a few fields near Cd. Juárez, Chihuahua and Nuevo Laredo, Tamaulipas, there was some economic damage.

More efficient stalk destruction and plowing were emphasized and generally accomplished. The first survey of the 1960 growing season indicates a lighter infestation in general. Planting periods were reduced in most areas and in the Laguna region the period was oficially set to begin March 25 and end April 30. In previous years, the period started in February and ended in May. The new period was successfully applied.

There is an approximate increase of 10 per cent in the acreage planted over previous year.

Through contractual arrangements between the Plant Pest Control Division and the oil mills involved, contamination-free box cars of fan treated cottonseed hulls from cotton oil mills in Obregón and Empalme, Sonora were certified as being free of pink bollworm hazard, for entry into United States.

PINK BOLLWORM SURVEY SUMMARY F. Y. 1960

STATE	INSPECTION							
	Within Regulated Area				Outside Regulated Area			
	Inspected		Infested		Inspected		Infested	
	Number Locations	Estim. Acres	Number Locations	Estim. Acres	Number Locations	Estim. Acres	Number Locations	Estim. Acres
Tamaulipas	112 807	404,606 Repeat	51	394,050	1 2	4,500 Repeat		
Nuevo Leon	166 46	33,933 Repeat	24	30,864				
Coahuila	178 77	101,184 Repeat	173	90,474				
Durango	184 73	85,823 Repeat	184	85,823				
Chihuahua	155 39	158,294 Repeat	104	126,099				
Sinaloa	55 130	15,000 Repeat			36 163	110,800 Repeat		
Sonora					82 189	302,820 Repeat		
Baja California					16 120	330,000 Repeat		
TOTALS	2,022	798,840	536	727,310	609	748,120	0	0

PINK BOLLWORM CULTURAL CONTROL - Quarantined Area F. Y. 1960

STATE	Stalk Destruction Deadline	Acreage Planted (Est.)	Acres Stalk Destroyed This Season	Farm Calls	Bales Ginned This Season (Approx.)
Tamaulipas	8/31 9/25	657,500 6,250	657,500 6,250	17,882 864	366,969 2,589
Nuevo Leon	9/25	40,000	40,000	1,557	24,681
Coahuila	11/30	165,250	164,865	539	193,753
Durango	11/30 12/15	75,000 12,500	74,875 12,500	271 63	100,253
Chihuahua	11/30 12/10 12/31	80,275 48,165 61,813	79,467) 45,379)- 61,052)	338	207,478
Sinaloa	7/31	15,000	15,000	1,233	12,000
T O T A L S		1,161,753	1,156,888	22,747	907,723

CERTIFICATION

BOX CARS OF COTTONSEED HULLS FOR ENTRY INTO UNITED STATES F. Y. 1960

MONTHS	EMPALME, SONORA		OBREGON, SONORA	
	Tons of Hulls	Box Cars	Tons of Hulls	Box Cars
July	280	8		
August	360	16		
September	2,100	60	45	2
October	2,835	80	2,059	40
November	1,260	36	297	10
December	140	4		
January	665	19		
T O T A L	7,640	223	2,401	52

PINK BOLLWORM PROGRAM

PROGRAM COST DISTRIBUTION

☐ ESTIMATE ☒ ACTUAL

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

NAME OF PROGRAM	OPERATING UNIT	SIGNATURE	DATE	FISCAL YEAR
PINK BOLLWORM	PPC MEXICO REGION	[illegible]	1/24/61	1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC DIVISION								

* Column A: List entries in the following order:

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Feb 1959

PROGRAM COST DISTRIBUTION

[ ] ESTIMATE [X] ACTUAL

NAME OF PROGRAM: PINK BOLLWORM

OPERATING UNIT: PPC MEXICO REGION

DATE: 1/24/61

FISCAL YEAR: 1960

SOURCE OF CASH AND EQUIVALENT (A) *	PLANNING AND DIRECTION (B)	TECHNICAL ASSISTANCE (C)	SURVEY (D)	CONTROL (E)	REGULATORY (F)	METHODS IMPROVEMENT (G)	OTHER (H)	TOTAL (I)
(1) PPC [illegible]								
[illegible]	14,[illegible]	[illegible]	[illegible]	[illegible]2	[illegible]2			17,0[illegible]
[illegible]	10,[illegible]	[illegible],357	17,[illegible]	3,262	2[illegible],[illegible]03			70,[illegible]
[illegible]	11,[illegible]	17,113	10,[illegible]	1,[illegible]	30,761			[illegible],[illegible]14
(2) [illegible]	[illegible]	[illegible]	2,[illegible]	[illegible],13[illegible]	60,[illegible]			176,2[illegible]6
(3) [illegible] MEXICO								
[illegible] - West	1,000	1,[illegible]3	2,000	3,000	[illegible],277			13,[illegible]
De[illegible] - East	[illegible],077	[illegible],000	20,000	20,000	20,000			76,077
[illegible] - West Mexico		[illegible]						[illegible]
Pa[illegible] - West Mexico			2,[illegible]00	2,[illegible]	17,[illegible]0			22,06[illegible]
Pa[illegible] - East Mexico	1,000	163	[illegible],000	1,[illegible]	1[illegible],000			3[illegible],163
[illegible] (Grant Funds) West					2,031			2,[illegible]31
(4) [illegible]	4,[illegible]	12,6[illegible]	[illegible]	40,[illegible]	60,[illegible]			120,[illegible]
(5) [illegible]	41,7[illegible]	3[illegible],414	61,160	64,024	120,[illegible]			327,230
(6) CO[illegible] ICE								
I[illegible] - [illegible] Mexico			3[illegible]		15,000			15,325
In[illegible] - East Mexico				4,[illegible]00	671,6[illegible]			676,[illegible]
(7) [illegible]			3[illegible]	4,[illegible]00	6[illegible],64[illegible]			6,1,773
(8) [illegible] TOTAL	41,7[illegible]	3[illegible],414	61,4[illegible]	6[illegible],024	607,492			1,019,003

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Feb 1959

COOPERATIVE INSPECTION STATIONS

Inspection stations, as a cooperative endeavor with the Defensa Agrícola of México, were continued in operation in Northwest Mexico during the year.

The inspection stations, strategically located at airports, sea ports, railroad terminals, and highways, continued to fulfill their objective. Areas of Baja California and Northern Sonora, adjacent to the United States, were kept free of pink bollworm and citrus blackfly. A limited amount of cotraband Mexican fruit fly host material apparently made its was into the Tijuana, B. C. area, where it was necessary to spray to eradicate an incipient infestation. However, the lightness of the infestation proved the efficacy of the inspection stations.

All types of traffic, vehicular and passenger, including braceros, were inspected and a substantial amount of pink bollworm, citrus blackfly and Mexican fruit fly host material was intercepted. Trucks and box cars found contaminated with pink bollworm host material were either cleaned or fumigated. In addition, at Benjamin Hill, Sonora and at Ensenada, B. C., many commercial shipments of citrus and mangoes were fumigated with ethylene dibromide to allow these fruits to move from the south of México into Northern Sonora and Baja California, free of the Mexican fruit fly hazard.

COOPERATIVE INSPECTION STATIONS F. Y. 1960

Inspection Stations	Type of Inspection	Number of Inspections	Number of Passengers & Braceros	Pieces of Baggage & Express	RR Cars & Trucks Cleaned &/or Fumigated	Host Interceptions					
						Occasions			Items		
						MFF	CBF	PBW	MFF	CBF	PBW
BAJA CALIFORNIA											
Tijuana	Plane	2,090	39,590	146,113		668	76				
Mexicali	Plane	710	11,087	47,160		148					
	Trucks	990									
	Railroad	10,297			179	15	4	1			
Ensenada	Plane	208	1,657	38,042		23					
	Boat	219	820			5					
SONORA											
San Luis	Rd. Station	21,721							8,769	107	124
Benjamin Hill	RR cars	7,598			2,085						
	RR pssgr.		194,069						29,610	296	4,625
	Rd. station	156,360			48	24,636	529	688			
Nogales	Plane	986	15,822	39,481		368	5	197			6
	RR Mkt.Mail	Daily				373		61	* 5,000		58
SINALOA											
Mazatlan	Rd. Station	76,148	6,595		968						1,650
	Plane	762									
	RR cars	829	35,653		33						216
	RR trains	693									
	Boat	220	69								
Terreros	Rd. Station	75,113	90,630		415						384
TOTALS		354,944	395,992	270,796	3,728	26,236	614	947	43,379	403	7,063

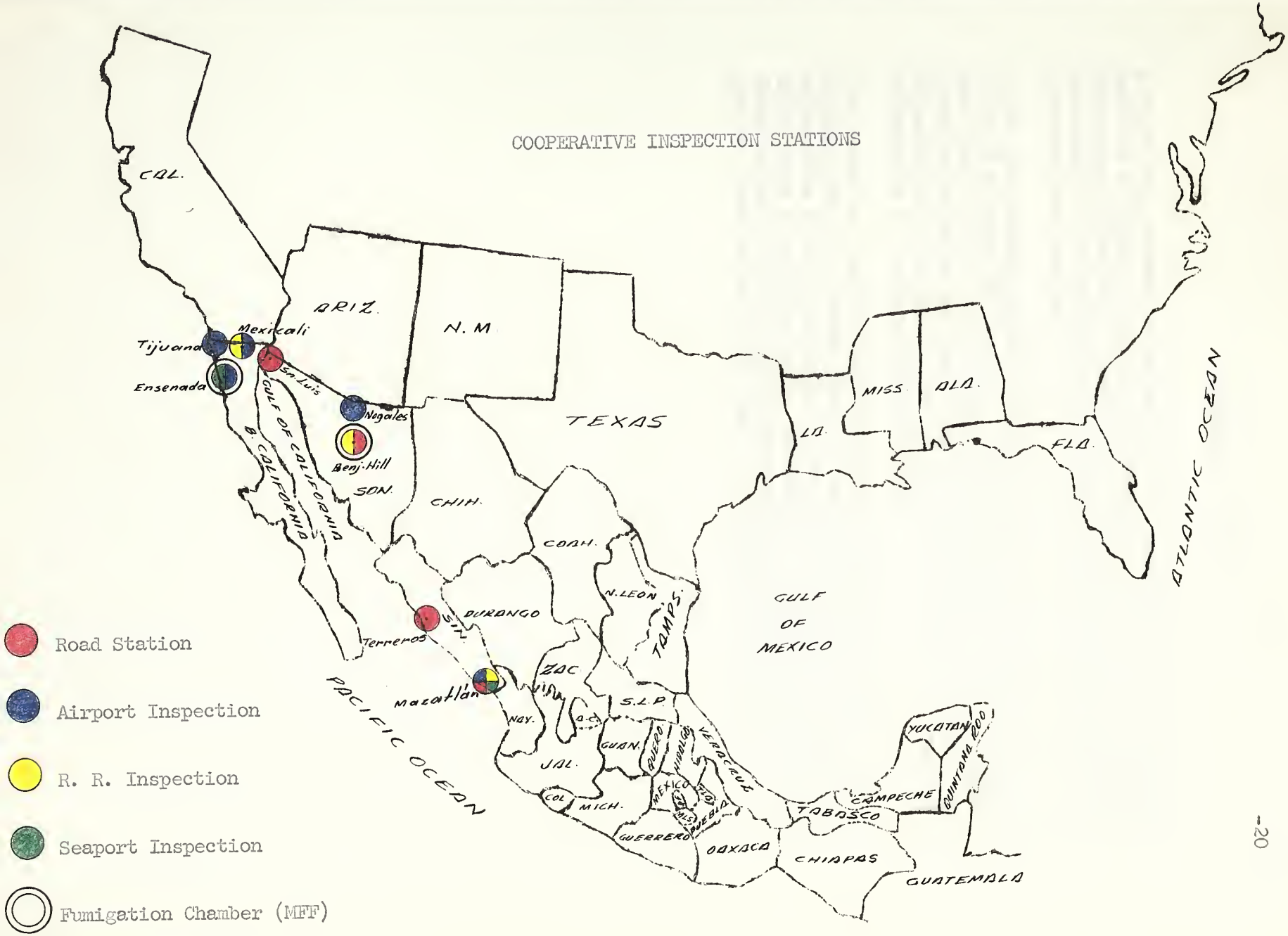
* Also intercepted 1,000 kilos of oranges.

FUMIGATION OF FRUIT F. Y. 1960

LOCATION	KILOS OF FRUIT FUMIGATED						
	Mangoes	Oranges	Sweet Limes	Plums	Grapefruit	Tangerines	Total
SONORA							
Benjamin Hill	1,244,208	638,917	13,110	51,320	1,195	1,145	1,949,895
BAJA CALIFORNIA							
Ensenada *	5,600						5,600
TOTAL	1,249,808	638,917	13,110	51,320	1,195	1,145	1,955,495

* 834 boxes of mangoes and 20 boxes of plums were also fumigated, weight not mentioned.

COOPERATIVE INSPECTION STATIONS



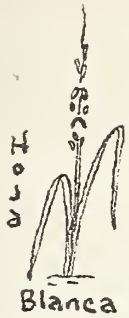
ALFOMBRILLA SURVEY

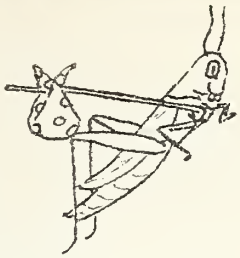
A cooperative survey for alfombrilla was undertaken with the Defensa Agrícola of México in the northern portions of Chihuahua and Sonora in the spring of the year. The purpose of this survey was to determine the extent of the Northern Mexico area in which this plant, toxic to livestock, was growing, and its proximity to the United States border.

It had been determined that alfombrilla does not normally occur in the soils of a higher PH than 6.8. Therefore, survey crews were supplied with field kits for soil testing to enable them to eliminate those areas not suitable for the development of the plant. The finding of a PH suitable for the plant made it possible to confine the search for alfombrilla to the more probable areas.

The survey was concluded before the end of the fiscal year. It was revealed that the closest place to the United States border where alfombrilla could be found was in the State of Chihuahua, some seven miles south of Antelope Wells, New Mexico. Northern Chihuahua was found to have considerably more alfombrilla than Sonora, where the area of distribution of the plant is apparently very limited.

ALFOMBRILLA SURVEY





ANNUAL REPORT

of

COOPERATIVE PROGRAMS

Fiscal Year 1960

SOUTHERN REGION

U. S. Department of Agriculture
Agricultural Research Service
Plant Pest Control Division

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BARBERRY ERADICATION

There is no Barberry eradication work in the Southern Region except an annual survey which is made of the nurseries and premises of dealers handling Barberry or Mahonia plants for interstate shipment to assure that no rust susceptible species of Barberry are offered for sale to customers in the eradication states.

During 1960 inspections were made of 107 nurseries and 13 dealer establishments in the 11 states of the Region. All nursery stock was found eligible for certification.

BURROWING NEMATODE

During the year considerable difficulty has been encountered in drawing up and putting into effect a Burrowing Nematode Program, which met with the approval of all interested parties. The Florida Supreme Court previously had ruled that the property owner must be compensated for the damage caused by the pushing and treating of his infested citrus trees. Because of failure to work out a suitable program, and to agree upon the approach to take in cleaning up areas of infestation, Federal participation in this program was limited considerably during the year.

In December 1959, Dr. Ross Suit, of the Lake Alfred Citrus Experiment Station, announced that Nemagon, when introduced into irrigation lines, reduced the burrowing nematode populations and brought about tree recovery, but much remains to be learned before this treatment can be recommended for control or eradication of the burrowing nematode.

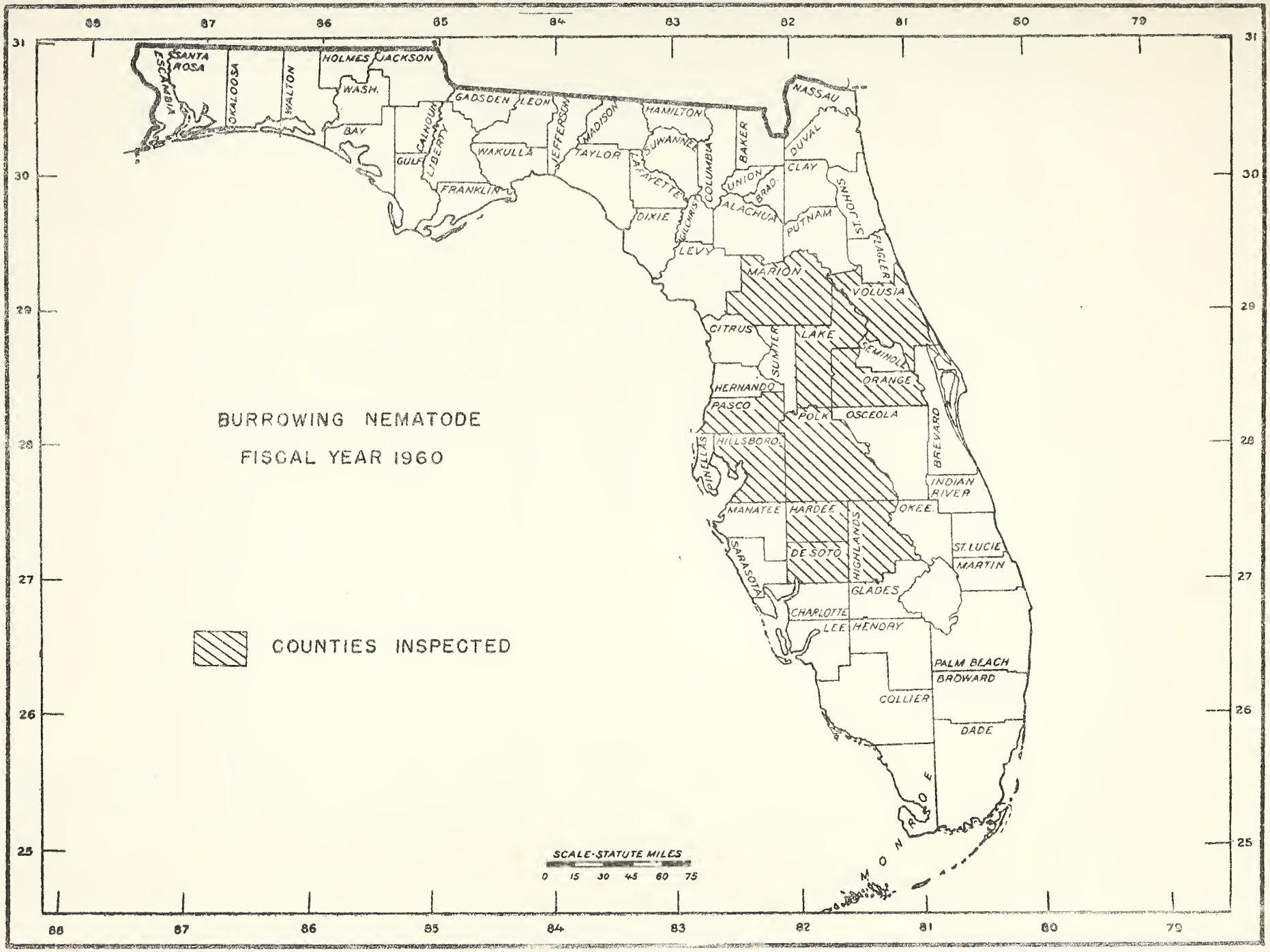
During the month of February 1960, the State Plant Board began a series of treatments in eight groves, using emulsifiable Nemagon, applied at the rate of 2 to 8 gallons per acre at intervals of 15 to 30 days, and up to four or five treatments per grove, in an effort to determine, on a field basis, the effect of these treatments. Despite the high cost of the treatment (up to $300 per acre), many growers have expressed a desire to begin Nemagon treatment of their infested properties in preference to having them pushed and treated. Much of the area which was delimited for the push-and-treat program has been treated with Nemagon. In other cases, the growers have requested that their groves not be pushed until such time as additional information pertaining to the Nemagon treatment has been developed. It is generally conceded that growers probably will not continue to participate in the push-and-treat program as long as any hope exists for a less drastic treatment.

The Plant Pest Control Division has tentatively agreed to delimit for Nemagon treatments or Nemagon barriers, provided area cleanup or area encirclement of decline can be accomplished.

The Methods Improvement Section has developed an auger of a new type which collects samples at a greater depth than the one presently in use and averages about 30 percent more roots per sample. They also have developed a method of injecting emulsifiable Nemagon at a given rate into irrigation lines.

Initial inspections were made of 399 groves, 91 of which were found infested. Delimiting inspections were completed on 2,700 acres of citrus groves. The inspection of 512 citrus nurseries revealed 39 to be infested. Of 148 ornamental nurseries inspected, 34 were infested. More than 82,000 samples of roots were processed in the laboratories.

FLORIDA


BURROWING NEMATODE
FISCAL YEAR 1960
COUNTIES INSPECTED
SCALE-STATUTE MILES
0 15 30 45 60 75
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
JACKSON
WASH.
BAY
GULF
CALHOUN
LIBERTY
GADSDEN
LEON
WAKULLA
FRANKLIN
JEFFERSON
MADISON
TAYLOR
HAMILTON
SUWANNEE
LAFAYETTE
DIXIE
GILCHRIST
COLUMBIA
BAKER
NASSAU
DUVAL
CLAY
UNION
BRAD.
ALACHUA
PUTNAM
ST. JOHNS
FLAGLER
LEVY
MARION
VOLUSIA
CITRUS
SUMTER
LAKE
SEMINOLE
ORANGE
HERNANDO
PASCO
POLK
OSCEOLA
PINELLAS
HILLSBORO
BREVARD
INDIAN RIVER
MANATEE
HARDEE
OKEE.
SARASOTA
DE SOTO
HIGHLANDS
ST. LUCIE
MARTIN
GLADES
CHARLOTTE
LEE
HENDRY
PALM BEACH
BROWARD
COLLIER
DADE
MONROE

3

BURROWING NEMATODE	Region Southern	Prepared by
	Period (Designate: Month, 1-15, 16-31 or 1-31 Fiscal Year 1960	Date Prepared

STATE AND COUNTY	SURVEY													
	A GROVES			B Margins of Previously Pushed Areas				C Com.Cit. Nurseries		D Orn.&Gen. Nurseries		E Misc.		F Samples Processed Laboratory
	Initial Insp.	New Inf.	Acres Delim.	Trees Insp.	Trees Pos.	Margins Inf.	Acres Released	Insp.	New Inf.	Insp.	New Inf.	Insp.	New Inf.	
Florida	399	91	2,706.50	2,694	138	26	600.05	512	39	148	34	362	28	82,169
Total This Period														
Total from July 1	399	91	2,706.50	2,694	138	26	600.05	512	39	148	34	362	28	82,169
Total from beginning of program	6,753	1257	16,736.50	24,980	818	191	2307.18	5759	355	1259	260	1812	213	647,181

BURROWING NEMATODE	Region: Southern	Prepared by
	Period (Designate: Month 1-15, 16-31, or 1-31) Fiscal Year 1960	Date Prepared

State and County	Control								Regulatory				
	Groves Fumigated A				Buffer Zones Installed B				Commercial Citrus Nurseries C				
			Cumulative				Cumulative					Sites Approved	
	No.	Acres	No.	Acres	No.	L. Feet	No.	L. Feet	Under Quar.	Cleaned Up.	Stock Treated	No.	Cumul.
Florida	44	278.00	-	-	11	11,835			32	33	131,508	585	582*
Total This Period:													
Total from July 1	44	278.00			11	11,835			32	33	131,508	585	582*
Total from beginning of Program			654	5280			11	11,835	86	248	702,051		1624*

PPC 7-2a (Rev. Sept. 1959)

Fla. State Plant Board-USDA Cooperating

* Total allows for site revocations during year.

5

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Burrowing Nematode

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	7	2	2	-	-	1	59	1	300	10	3	4
Total	7	2	2	-	-	1	59	1	300	10	3	4

CITRUS BLACKFLY

The citrus blackfly, a native of Asia, was first found in the new world about 1913. It was first found in the United States in the state of Florida in 1934, and subsequently eradicated. In 1955, it was found at Brownsville, Texas. Eradication efforts by the State Department of Agriculture have been effective and no infestations have been reported in that state since August 31, 1956.

The insect is capable of causing very severe damage to citrus plantings. There is no federal quarantine against the pest; however, the Division assists the states in the continuous fight to prevent it from becoming established in the United States.

The program, as currently carried out, involves only survey activities. This year, surveys were made in Brooks, Cameron, Dimmit, Hidalgo, and Webb Counties, Texas. State and Federal survey crews inspected 255,978 trees on 6,208 properties with negative results. Inspections were made of citrus plantings in the Cities of Brownsville, Progresso, Hidalgo, McAllen, and Laredo, each of which are ports of entry from Mexico. In addition, surveys were carried out in all citrus plantings along major highways as well as the citrus plants along roads leading northward from the Mexican ports of entry.

CITRUS BLACKFLY

Region	Prepared by
Southern	
Period *(Designate: Month, 1-15, 16-31, or 1-31)* Fiscal Year 1960	Date Prepared

STATE COUNTY LOCATION A	INSPECTIONS BY LOCATION		INFESTATIONS BY LOCATION		CONTROL APPLICATIONS							
					Property Sprayed				Trees Sprayed			
	Properties Number B	Trees Number C	Properties Number D	Trees Number E	1st F	2nd G	3rd H	4th I	1st J	2nd K	3rd L	4th M
Texas	6,208	255,978	0	0	-	-	-	-	-	-	-	-
Total This Period												
Total From July 1	6,208	255,978	0	0	-	-	-	-	-	-	-	-

PPC 7-3
(Feb-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Citrus Blackfly

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Texas	1	1	2	-	-	-	4	-	-	-	-	2
Total	1	1	2	-	-	-	4	-	-	-	-	2

COOPERATIVE ECONOMIC INSECT SURVEY

The survey was conducted for the ninth consecutive year. All eleven states in the Region participated with eight operating under cooperative agreements. All states having Survey Entomologists submitted summary reports, lists of the more important insects, and other special information for the calendar year. In addition, several states submitted information pertaining to crop losses caused by various insects.

Two work shops pertaining to plant pest survey and detection were held in the Southern Region. These were well received and considerable interest shown on the part of cooperators. It was recommended that similar work shops be held at a state level, where practicable, during the next fiscal year.

The Division paid $32,200.00 to the states in accordance with the terms of the agreements. It was estimated that the same states expended an aggregate of $56,451.53 for this work.

In addition to the routine economic insect survey work, other surveys were conducted as follows:

Beet Leafhopper

The 1960 beet leafhopper survey in Texas was started March 3, 1960, and completed May 18, 1960. The work was done by the Survey Entomologist in Texas and by Plant Pest Control personnel.

The survey covered 43 counties, and survey stops were made at 94 sites. Host plants were found at 84 sites, and 166 beet leafhoppers were collected. This averaged 3.95 beet leafhoppers per 100 square feet, as compared with 5.5 per 100 square feet in 1959.

Host plants were abundant and in good condition for survey.

Boll Weevil

Cooperative Federal-State boll weevil hibernation and survival surveys were conducted during the fall and spring of the fiscal year. Plant Pest Control personnel in the states of Arkansas, Mississippi, and North and South Carolina, assisted in the surveys by collecting woods trash for making boll weevil hibernation counts.

Chinch Bug

Chinch bug surveys were conducted in 18 counties in Arkansas and 44 counties in Oklahoma during 1960. The work was carried out cooperatively by state and federal inspectors in both states. Infestations in Arkansas were generally of noneconomic importance. Findings in Oklahoma were noneconomic in 27 counties and severe in only one.

The weather cycle has been unfavorable for chinch bug development for the past four years, explaining in part the suppression of damaging population buildup this year.

European Corn Borer

Formal survey for the European corn borer was made in Texas. Scouting was conducted in several of the other states.

Potato Psyllid

The 1960 survey of the potato psyllid spring-breeding area in Texas was started March 7, 1960, and completed March 22, 1960, with the Texas Extension Service Entomologist and Plant Pest Control personnel participating.

Lycium, the main host plant, was found to be dormant at ten localities in the El Paso and Sanderson area. Later rechecks were negative. Populations were heaviest in the San Angelo and Del Rio areas where the condition of the plants were more favorable for sweeping. Psyllids were found at the overall rate of 12 per 100 sweeps, which is considerably lower than in previous years.

GOLDEN NEMATODE

Surveys for golden nematode were carried out in the states of Arkansas, Alabama, Florida, Georgia, Mississippi, and Texas, where 283 soil samples were collected from 4,327 acres. In addition, 509 grader samples were collected from an estimated 15,794 acres.

Although the pest is not known to occur within the Southern Region, it has been determined that detection-type surveys should be carried out on a progressive basis. Attention is being directed primarily to the inspection of commercial Irish potato growing areas, and other likely points of infestation.

GOLDEN NEMATODE

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date Prepared:

AREAS SURVEYED A	FIELD SURVEYED		GRADER SURVEY			INFESTATIONS		TOPSOIL MOVEMENT		TOTAL SERVICE CALLS K
	Acres B	Samples Collected C	Stations Visited D	Samples Collected E	Acres Represented F	Properties G	Acres H	Pits Operating I	Loads Moved J	
Long Island Nassau County Suffolk County										
Total This Period										
Total From July 1										
Total From Beginning of Program										
Other Areas by States										
Alabama	3,305	215	44	144	12,200					
Arkansas	0	0	7	78	2,220					
Florida	40	9	0	6	0					
Georgia	940	35	0	0	0					
Mississippi	24	9	0	0	0					
Texas	18	15	28	281	1,374					
Total This Period										
Total From July 1	4,327	283	79	509	15,794					
Total From Beginning of Program - L. I. Excluded *	38,642	1,804	213	956	28,797					

On December and June reports show:

(a) Acres removed by housing developments _____ (from beginning of program).

(b) Acres "A" land _____ ("A" land is that portion of field in which golden nematode cysts have been found.)

(c) Acres "B" land _____ ("B" land is that portion of an infested field in which golden nematode cysts have *not* been found.

PPC Form 7-5
July 1958

* Includes fiscal years 1959 and 1960. Records not available for survey prior to 1959.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

GRASSHOPPER

The purpose of the Grasshopper Control Program is to observe the population fluctuations, advising landowners of the probable damage and, where necessary, assisting in reducing the populations below the damage level. Formal surveys were conducted in northern Texas, Oklahoma, and Arkansas, with populations found on about 3¼ million acres in the first two states. As the season progressed, it was found necessary and practical to apply control measures to slightly more than 300,000 acres. All of this work was performed and paid for by the landowners.

At the close of the fiscal year (June 30) there did not appear to be any likelihood of devastating outbreaks for the remainder of the summer of 1960. Annual surveys, of course, will be necessary throughout the foreseeable future.

GRASSHOPPER

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date prepared:

COUNTY OR LOCATION A	STATUS First of Period B	INFESTED ACRES* State & Private C	INFESTED ACRES* Public Domain** D	INFESTED ACRES* Total Acreage E	ACRES SCHEDULED FOR TREATMENT F	ACREAGE TREATED State & Private G	ACREAGE TREATED Public Domain** H	ACREAGE TREATED Total Acres I	STATUS End of Period J
Oklahoma	275,000	275,000	0	275,000	0	0	0	0	275,000
Texas	2,976,010	2976,010	0	2,976,010	0	0	0	0	2,976,010
Total This Period	3,251,010	3,251,010	0	3,251,010	0	0	0	0	3,251,010
Total From July 1						0	0	0	

*Any minus figure must be explained.

**Identify ownership by Agency, i.e., BLM, Forest Service, etc.

PPC 7-6
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Grasshopper

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Oklahoma	* 50						* 12					* 5
	County Agents, State and College Cooperators as well as farmers and ranchers were kept informed on the status of the infestation according to survey data through meetings, news articles, and special reports.											
Texas	* 750											
	Meetings were with County Extension Agents, aerial applicators, representatives of insecticide firms, members of County Grasshopper Committees, and interested farmers and ranchers.											
Total	* 800						* 12					* 5

* Estimates.

HOJA BLANCA

Hoja blanca, a destructive insect-transmitted virus disease of rice, was first found in the United States near Belle Glade, Florida, in 1957. In the fall of 1958, the disease was found in Hancock County, Mississippi. During 1959, hoja blanca was found in 11 parishes of Louisiana, and the vector was found in three additional parishes. A small infestation was also found in 1959, in Harrison County, Mississippi.

During the year, an intensive survey and eradication program was initiated. Surveys were carried out in eight states on 453,748 acres. The major portion of the inspections was made in the commercial rice-growing areas of Arkansas, Louisiana, Mississippi, and Texas. Eradication treatments using effective insecticides were applied to an aggregate of 32,410 acres.

During the fall, a screen wire cage, covered over for protection from insecticide applications, was placed in the heaviest infested field in St. Tammany Parish, Louisiana, in an effort to determine if the vector Sogata orizicola over-wintered in this country. This project was under the supervision of Dr. L. D. Newsom of Louisiana State University. This cage was inspected during the latter part of March, with 12 to 15 dead specimens found but no live hoppers were observed. The cage was inspected again in May, with negative results.

Surveys for the vector Sogata orizicola were resumed during the latter part of February in five south Louisiana Parishes which were found infested last year. These surveys were continued and expanded for the remainder of the fiscal year with negative results.

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

HOJA BLANCA

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date prepared:

STATE COUNTY LOCALITY A	SURVEY		INFESTATIONS FOUND			CONTROL			
				Acres		Chemical		Cultural	
	Properties B	Acres C	Properties D	Cultivated E	Non-cultivated F	Properties G	Acres H	Properties I	Acres J
Arkansas	349	29,674	0	0	0	0	0	0	0
Florida	58	1,965	0	0	0	0	376	0	1,787
Georgia	24	264	0	0	0	0	0	0	0
Louisiana	2,096	243,769	42	7,519	65	43*	32,014	0	0
Mississippi	350	66,358	1	1	0	0	20	0	728
Oklahoma	7	207	0	0	0	0	0	0	0
South Carolina	24	723	0	0	0	0	0	0	0
Texas	696	110,788	0	0	0	0	0	0	0
Total This Period									
Total From July 1	3,604	453,748	43	7,520	65	43*	32,410	0	2,515
Total From Beginning of Program	4,427	495,553	48	7,901	80	48*	36,969	4	4,335

Report: Total counties by States infested from beginning of program

PPC Form 7-23
Feb 1959

* La. properties (4) treated where vector only was found.

PLANT PEST CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Hoja Blanca

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	-	-	-	-	-	-	20	-	-	-	-	-
Louisiana	12	12	2	-	-	-	6	-	75	-	12	4
Total	12	12	2	-	-	-	26	-	75	-	12	4

IMPORTED FIRE ANT

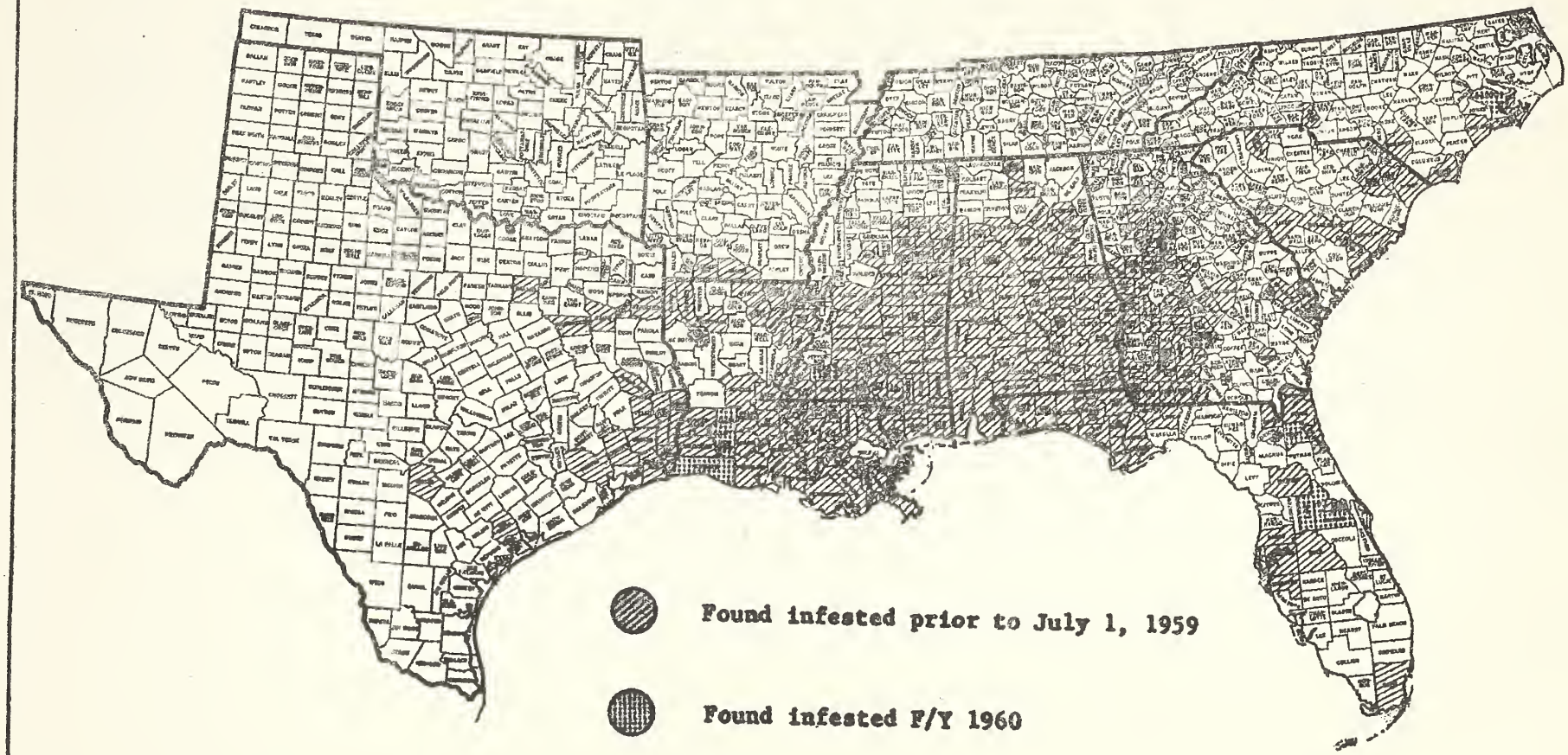
The imported fire ant, a destructive and annoying pest native of South America, was introduced into the United States about 1918. It was not until the fall of 1957 that the Plant Pest Control Division was authorized by Congress to participate in a State-Federal Imported Fire Ant Eradication Program. Cooperative eradication programs were soon organized, and by June 1959, over 1-1/4 million acres had been treated in 9 southern states.

During the current year, surveys were carried out in all infested states as well as in the neighboring states. Infestations were found for the first time in 15 counties--3 in Florida , 5 in Georgia, 4 in Louisiana, 1 in Mississippi, and 2 in North Carolina--making a total of 276 counties in 9 southern states. Of these 276 counties, all known infestations have been treated in 66. Eradication programs are now under way in 77 of the 210 counties in which active infestations are known to occur. Regulatory treatments have been applied where necessary in the remaining counties. Insecticides were applied to a total of 892,521 acres this year.

Recent tests have demonstrated the effectiveness of using split applications of heptachlor at the rate of 1/4-pound per application. This new treatment considerably reduces the hazards of residue and the possibility of ill effects on wildlife.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE - PLANT PEST CONTROL DIVISION
SOUTHERN REGION

IMPORTED FIRE ANT - FISCAL YEAR 1960



Agriculture - Dodge Printing Co. Gulfport, Miss.

IMPORTED FIRE ANT

REGION	PREPARED BY
Southern	
PERIOD (Designate: Month, 1-15, 16-31, or 1-31)	DATE PREPARED
Fiscal Year 1960	

STATE COUNTY LOCALITY A	ESTIMATE ACRES OF INFESTATION B	COOPERATIVE ERADICATION PROGRAM BY AIRCRAFT C	COOPERATIVE ERADICATION PROGRAM OTHER D	BY FARMERS EXCLUSIVE OF COOP PROGRAM E	TOTAL ACRES TREATED* F	ESTIMATE OF ACRES REMAINING TO BE TREATED G
Alabama		34,125	46,721	18,722	99,568	10,750,088
Arkansas		(1,288)* 9,832	545	0	(1,288)* 10,377	1,288
Florida		33,243	43,815	84	77,142	1,448,216
Georgia		(40,593)* 391,715	13,314	20	(40,593)* 405,049	1,093,719
Louisiana		(102,706)* 164,559	(486)* 11,279	2,901	(103,192)* 178,739	5,373,285
Mississippi		(1,035)* 0	(190)* 46,283	3,659	(1,225)* 49,942	4,383,815
N. Carolina		0	5,335	0	5,335	4,167
S. Carolina		3,200	4,134	31	7,365	0
Texas		(1,000)* 10,958	45,794	2,252	(1,000)* 59,004	1,163,130
TOTAL THIS PERIOD						
TOTAL FROM JULY 1		647,632	217,220	27,669	892,521	24,217,708
TOTAL FROM BEGINNING OF PROGRAM		1,474,580	625,715	173,760	2,274,055	XXX

*COLUMNS C, D, AND E, INCLUSIVE.

PPC 7-22 (JULY 58)

* Received first application only of two-application treatment.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

PLANT PEST CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Imported Fire Ant

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories	* Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Alabama	88	98	2	18	5	1	7	4	1,000	5,110	6	15
Arkansas *	3	2	3	-	*	*	4	-	-	-	-	-
Florida	14	20	11	13	2	3	133	1	2,596	401	8	2
Georgia	65	177	101	73	19	2	115	45	5,236	640	73	4
Louisiana	25	12	2	5	3	-	21	-	100	75	6	15
Mississippi	54	6	-	-	30	-	50	-	500	1,000	-	-
North Carolina	6	5	6	1	-	-	5	-	25	(freq)	(freq)	-
South Carolina	9	7	17	1	2	1	5	-	100	328	5	-
Tennessee	-	12	18	-	-	-	-	-	-	985	-	-
Texas	9	8	6	8	-	1	4	-	20	-	-	-
Total	273	347	166	119	61	8	344	50	9,577	8,539	98	36

* Arkansas. Newspapers and radio and television stations at El Dorado, Arkansas, gave daily coverage of control program during period of aerial application.

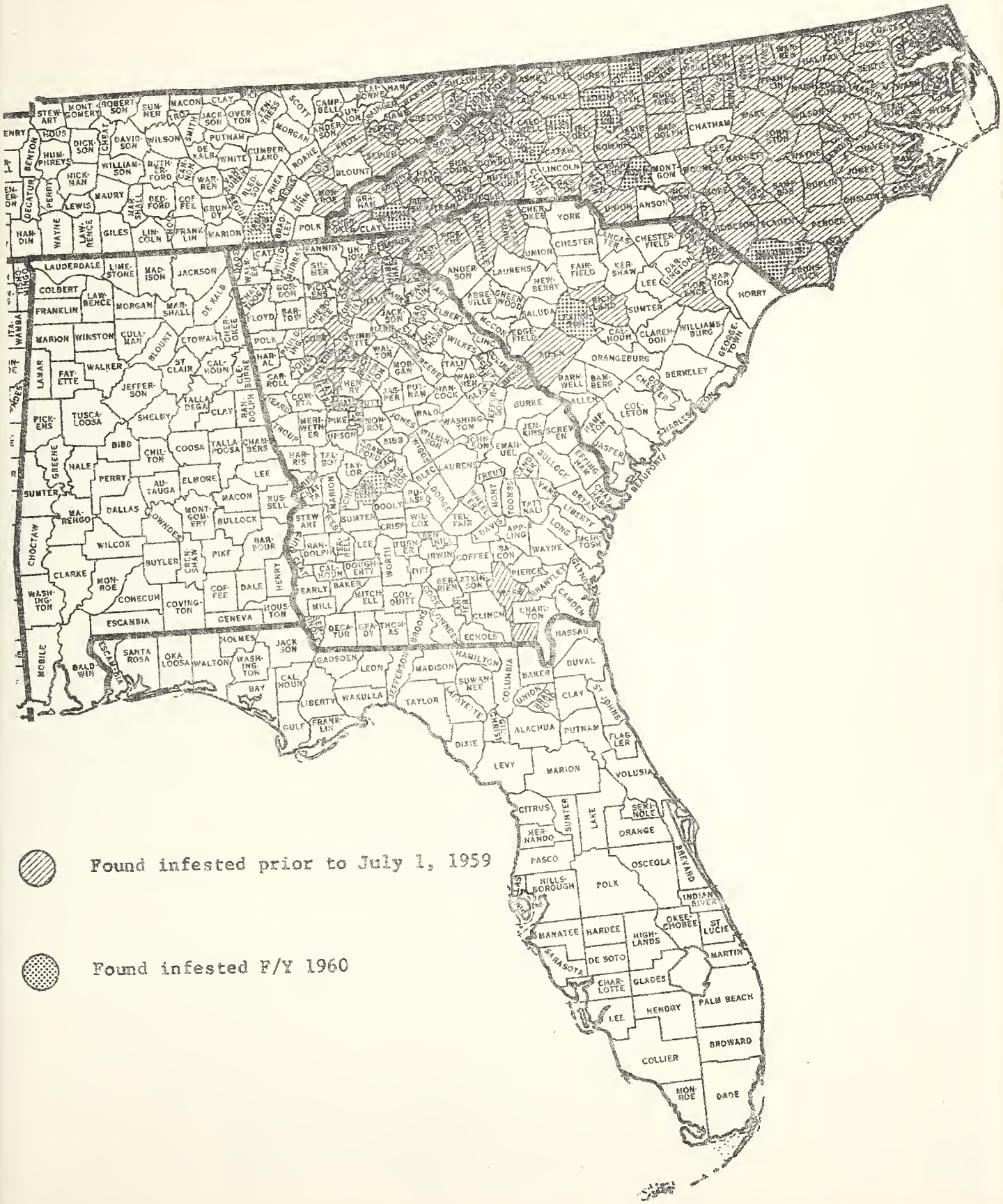
JAPANESE BEETLE

Probably no imported insect is so well known to such a large percentage of the people in the United States as is the Japanese beetle. Few imported insects have demonstrated equal ability to readily adapt themselves to environmental conditions in this country. The pest was first found in the Southern Region in 1932 in North Carolina. Since that time it has become generally distributed throughout much of northern Georgia, a substantial portion of South Carolina, and most of North Carolina, and scattered infestations have been found in eastern Tennessee. A few beetles have been captured in Alabama, Florida, and elsewhere, over the years. The pattern of long-distance spread in recent years has been fairly consistent; namely, a few hitchhikers found and probably more not found which established an infestation that was discovered a few years later. The spread of a few miles per year by their own flight has been fairly consistent.

Surveys were conducted in all of the states in the Southern Region during the fiscal year. Control measures were applied where necessary for regulatory purposes and to isolated small infestations where there was a probability of eradicating them or substantially retarding the development. All known infestations in Tennessee have been treated.

Virtually no Federal funds are available to this Region for this phase of the program. Most of the work, therefore, is carried on by the states or by Federal men incidental to other duties. The regulated portion consists of most of North Carolina. The population buildup during the late 1950's appeared to be less than normal. Some increase showed in 1959, and as of the close of this reporting period, there was good evidence that 1960 would be quite favorable for the pest.

JAPANESE BEETLE - FISCAL YEAR 1960



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

JAPANESE BEETLE

REGION: Southern

PREPARED BY:

PERIOD (Designate: Month 1-15, 16-31, or 1-31): Fiscal Year 1960

DATE PREPARED:

STATE AND COUNTY (A)	CERTIFICATION SERVICES: SHIPPERS SERVICED (B)	TOTAL SERVICE CALLS (C)	ESTIMATED VALUE PRODUCTS CERTIFIED (D)	(Nursery) PLOTS (Acres) (E)	BULK SOIL (Cu. Yds.) (F)	NO. OF PLANTS (G)	SURVEY: * TRAPS IN USE (H)	(Acres) VISUALLY SCOUTED* (I)	ACRES OF NEW INFESTATIONS OUTSIDE REGULATED AREA (J)	CONTROL (Acres): SOIL (K)	FOLIAGE (L)
Alabama	0	0	0	0	0	0	461	4,613	0	0	0
Arkansas	0	0	0	0	0	0	100	0	0	0	0
Florida	0	0	0	0	0	0	331	1,325	0	0	0
Georgia	0	1	$ 5.00	0	0	2	967	14,748	640	628	0
Louisiana	0	0	0	0	0	0	46	0	0	0	0
Mississippi	0	0	0	0	0	0	65	0	0	0	0
North Carolina	265	1,058	278,091.60	128	6	54,290	684	1,021	314,187	1,247	833
Oklahoma	0	0	0	0	0	0	63	0	0	0	0
South Carolina	10	25	25,780.00	22	0	0	439	364	109,950	0	0
Tennessee	0	0	0	0	0	0	893	1,134	13,291	4,543.5	31
Texas	0	0	0	0	0	0	38	0	0	0	0
TOTAL ~~THIS MONTH~~	275	1,084	$303,876.60	150	6	54,292	4,087	23,205	438,068	6418.5	864
TOTAL FROM JULY 1											
TOTAL FROM BEGINNING OF PROGRAM											

* Highest number traps used during any one month in F/Y by each state.

PPC Form 7-9
Feb 1959

Exclude trap examinations.

PLANT PEST CONTROL DIVISION

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Japanese Beetle

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	-	1	-	-	-	-	1	1	-	-	16	-
Georgia	2	1	1	-	-	-	-	1	30	25	7	2
N. Carolina	14	10	8	4	-	-	-	-	53	15	4	-
Tennessee	5	-	-	5	-	1	-	-	450	-	-	-
Texas	-	-	-	-	-	-	-	-	-	-	2	-
Total	21	12	9	9	-	1	1	2	533	40	29	2

* Written by Federal Personnel for release direct or through cooperators.

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KHAPRA BEETLE

The khapra beetle, considered the most serious of all storage insect pests, was first found in the United States in 1953. It has since been found at several locations in the states of California, Arizona, New Mexico, and in the El Paso area of Texas.

Inspections for khapra beetle were made in 10 states of the Southern Region during the year. In the El Paso area of Texas, an intensive survey was carried out which resulted in the finding of six new infestations and one reinfestation. These sites as well as three others found infested during the latter part of the previous fiscal year were fumigated. These 10 sites contained 639,633 cubic feet. There were no known active infestations in the Region at the close of the year.

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

KHAPRA BEETLE INSPECTION SUMMARY

REGION: Southern

PREPARED BY:

PERIOD (Designate: Month 1-15, 16-31, or 1-31): FISCAL YEAR 1960

DATE PREPARED:

STATE	INSPECTIONS			SPECIMEN COLLECTIONS SUBMITTED FOR IDENTIFICATION	ORIGINAL SITES ONLY					
	INITIAL	REPEAT	TOTAL		SITES FOUND INFESTED THIS PERIOD	TOTAL SITES FOUND INFESTED FROM BEGINNING	SITES YET TO BE TREATED	ESTIMATE OF VOLUME FOUND INFESTED THIS PERIOD (cu. ft.)	TOTAL VOLUME INFESTED FROM BEGINNING (Est. cu. ft.)	TOTAL VOLUME INFESTED YET TO BE TREATED [1]
A	B	C	D	E	F	G	H	I	J	K
ALA.	35	211	246	14	0	0				
ARK.	44	1	45	4	0	0				
FLA.	199	31	230	58	0	0				
GA.	20	4	24	1	0	0				
MISS.	233	126	359	0	0	0				
N. C.	32	0	32	5	0	0				
OKLA.	135	177	312	63	0	0				
S. C.	45	4	49	11	0	0				
TENN.	66	20	86	3	0	0				
TEXAS	796	2,238	3,034	474	6	28		211,396	1,930,912	0
TOTAL THIS PERIOD										
TOTAL FROM JULY 1	1,605	2,812	4,417	633	6			211,396		
TOTAL FROM BEGINNING OF PROGRAM	5,274	5,321	10,595	1,306		28			1,930,912	
REINFESTED PROPERTIES: ARIZONA										
CALIFORNIA										
NEW MEXICO										
TEXAS					1	1	0	8,569	8,569	0
REPUBLIC OF MEXICO										
TOTAL THIS PERIOD										
TOTAL FROM JULY 1					1			8,569		
TOTAL FROM BEGINNING OF PROGRAM						1			8,569	

[1] Adjust as measured volume becomes available.

PPC Form 7-15A
April 1959

PLANT PEST CONTROL DIVISION

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

KHAPRA BEETLE TREATMENT SUMMARY

REGION	PREPARED BY
Southern	
PERIOD (Designate: Month, 1-15, 16-31, or 1-31)	DATE PREPARED
FISCAL YEAR 1960	

STATE	SITES TREATED			CUBIC FEET TREATED			METHYL BROMIDE USED (Pounds)		
	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING
A	B	C	D	E	F	G	H	I	J
ARIZONA									
CALIFORNIA									
NEW MEXICO									
TEXAS	-	9	28	-	631,064	1,930,912	-	6,369.5	16,023.5
REPUBLIC OF MEX.									
TOTAL	-	9	28	-	631,064	1,930,912	-	6,369.5	16,023.5

SITES TREATED AND HELD
FOR FINAL CLEARANCE INSPECTION (Category 2)

STATE	PROPERTIES TREATED			CUBIC FEET TREATED			NAMES OF SITES HELD
	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	
A	B	C	D	E	F	G	H
ARIZONA							Union Stockyard
CALIFORNIA							Hold Bros.
NEW MEXICO							Beaver Egg Farm
TEXAS	-	2	7	-	332,000	454,600	
REPUBLIC OF MEX.							
TOTAL	-	2	7	-	332,000	454,600	

REETREATMENTS
(From Beginning of Program) [1]

STATE	PROPERTIES TREATED			CUBIC FEET TREATED			METHYL BROMIDE USED (Pounds)		
	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING	THIS PERIOD	SINCE JULY 1	SINCE BEGINNING
A	B	C	D	E	F	G	H	I	J
ARIZONA									
CALIFORNIA									
NEW MEXICO									
TEXAS	-	1	1	-	8,569	8,569	-	85	85
REPUBLIC OF MEX.									
TOTAL	-	1	1	-	8,569	8,569	-	85	85

[1] These figures remain in these sections and accumulate over the extension of time.

PPC Form 7-15B
April 1959

PLANT PEST CONTROL DIVISION

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Khapra Beetle

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	-	5	5	3	-	-	18	-	40	10	6	-
Georgia	-	-	-	-	-	-	-	-	-	25	-	-
Tennessee	-	-	-	-	-	-	-	-	-	380	-	-
Texas	3	3	7	-	-	1	6	-	-	-	-	-
Total	3	8	12	3	-	1	24	-	40	415	6	-

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MEDITERRANEAN FRUIT FLY ERADICATION PROGRAM

Although the Mediterranean Fruit Fly has been eradicated from the United States, it is necessary that an effective trapping program be carried out in the southern portion of the Region to immediately detect the possible introduction of that or any other fruit fly of economic importance which, if allowed to become established in the United States, could cause severe losses to our fruit and vegetable industries.

During the year, over 8,800 traps were in operation in the states of Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and Texas. Recent developments have made it possible to trap for more than one economic species of fruit fly at the same time, including the Mediterranean Fruit Fly, Oriental Fruit Fly, Melon Fly, and the Mexican Fruit Fly.

More effective lures have been developed which have increased the efficiency of the trapping program. Research work has been continued by the Florida Experiment Station to develop better methods of treatment of fruits and vegetables. Better traps, made of a polystyrene-type plastic, were developed and placed in operation. Trapping procedures, equipment, and techniques are constantly being reviewed by both state and federal program personnel, as well as by state and federal research workers. Trap lines are constantly being relocated in order to keep them placed in areas of preferred hosts. No fruit flies of economic importance have been trapped this year, although a number of interceptions have been made at the ports of entry.

MEDITERRANEAN FRUIT FLY

Region	Prepared by
Southern	
Period (Designate: Month, 1-15, 16-31, or 1-31)	Date prepared
Fiscal Year 1960	

STATE AND COUNTY* A	NEW INFESTATIONS Previously Infested Counties: Old Spray Areas B	Non-Spray Areas C	TRAPS IN USE *: Florida D	Other States E	POSITIVE SPECIMENS RECOVERED: Collections F	Properties G	Adults H	Larvae I	Recurrences J	New Finds K
Alabama				80						
Florida			8,324							
Georgia				34						
Louisiana				106						
Mississippi				63						
S. Carolina				87						
Texas				169						
Total This Period										
Total From July 1			8,324	539						
Total From Beginning of Program			xxx	xxx	3,174	-	7,619	4,345	8	1,921

* Highest number in use during any one month of F/Y for each state.

* Designate date when Mediterranean Fruit Fly is found in county for the first time. Use date on which identifying authority signs for the item.

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(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Mediterranean Fruit Fly — SUMMARY OF ASSOCIATED ACTIVITIES — Prepared by: _____

Region Southern — Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	2	8	-	6	-	-	203	3	137	1	2	-
Georgia	-	-	-	-	-	-	-	-	5	-	-	-
Texas	-	-	-	1	-	-	1	-	-	-	-	1
Total	2	8	-	7	-	-	204	3	142	1	2	1

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PLANT PEST CONTROL DIVISION

MEXICAN FRUIT FLY

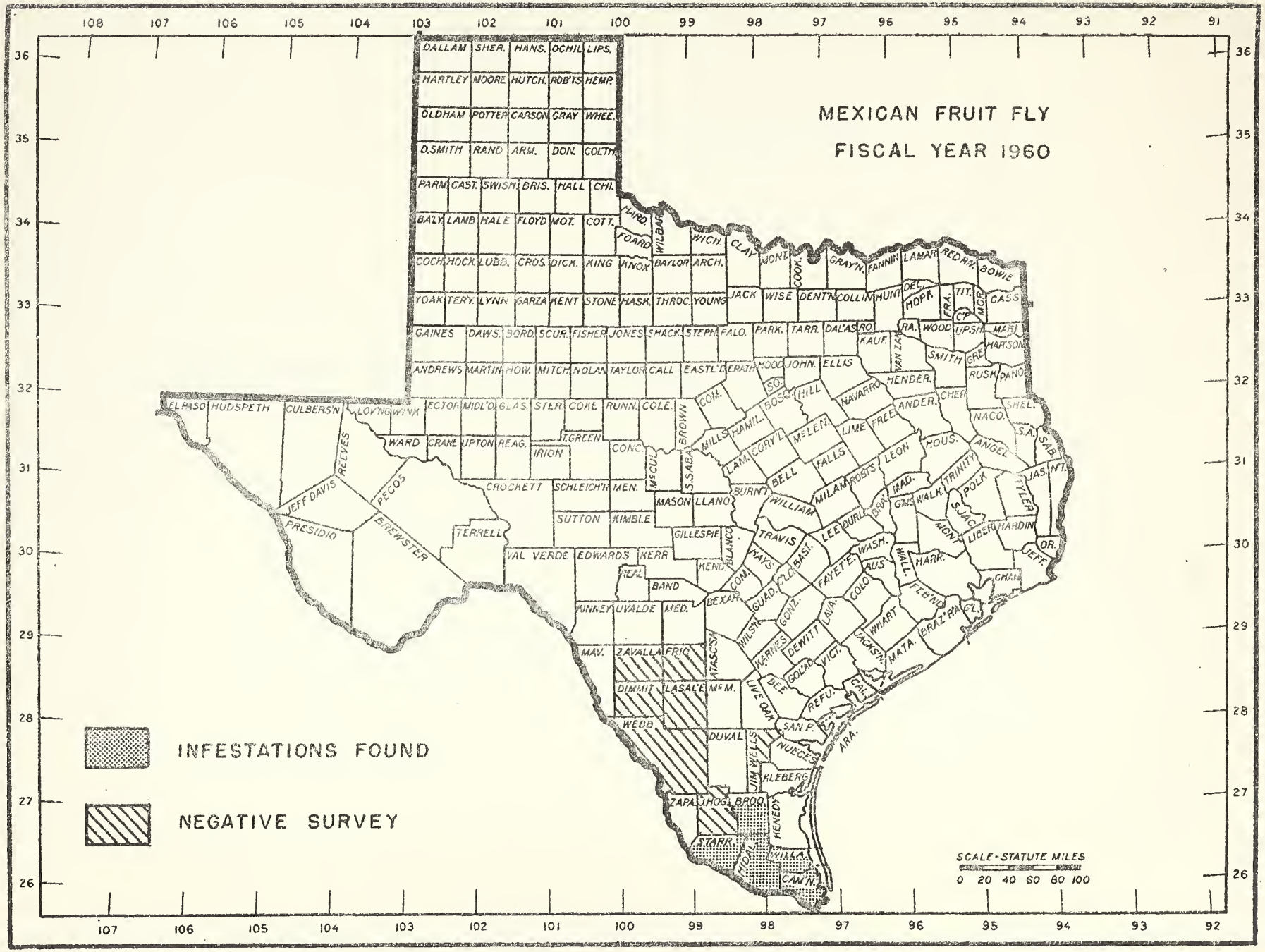
The Mexican fruit fly, a native of northeastern Mexico, attacks citrus and a variety of other fruits. The fly does not survive the summer in southern Texas, but migrates each year from Mexico to the Lower Rio Grande Valley of Texas, where it infests the citrus crop. In order to prevent the spread of the pest to other fruit-growing areas, it is necessary to carry out effective survey and regulatory programs.

During the 1960 season, 2,364 traps using standard lure plus yeast and pyridine were operated in Texas. Surveys were made in 8 regulated counties and 4 counties outside the regulated area. Starr County was the only new county found infested for the first time and placed under regulation February 2, 1960.

During the season, 412 Mexican fruit flies were trapped in Brooks, Cameron, Hidalgo, Starr, and Willacy Counties. Trapping in other counties was negative. Trap inspections totaled 54,244 on 141 properties. Eleven larval infestations were found as a result of 286 grove inspections.

The 1959-60 citrus crop consisted of 8½ million boxes. Of this total, 707,996 boxes were fumigated. A total of 523,640 boxes of fruit was certified for shipment to restricted areas with 2,059 master permits issued.

TEXAS


MEXICAN FRUIT FLY
FISCAL YEAR 1960
INFESTATIONS FOUND
NEGATIVE SURVEY
SCALE-STATUTE MILES
0 20 40 60 80 100
DALLAM SHER. HANS. OCHIL LIPS.
HARTLEY MOORE HUTCH. ROB'TS HEMP.
OLDHAM POTTER CARSON GRAY WHEE.
D.SMITH RAND ARM. DON. COLTH.
PARM CAST. SWISH. BRIS. HALL CHI.
BA'LY LAMB HALE FLOYD MOT. COTT.
COCH. HOCK. LUBB. CROS. DICK. KING
YOAK TERY. LYNN GARZA KENT STONE
GAINES DAWS. BORD. SCUR. FISHER JONES
ANDREWS MARTIN HOW. MITCH. NOLAN TAYLOR
EL PASO HUDSPETH CULBERS'N LOV'NG WINK
WARD CRANE UPTON REAG. IRION
CROCKETT SCHLEICH'R MEN.
JEFF DAVIS PRESIDIO PECOS BREWSTER
TERRELL
VAL VERDE EDWARDS KERR
SUTTON KIMBLE
MASON LLANO
GILLESPIE
REAL BAND
KINNEY UVALDE MED.
MAV. ZAVALLA FRIO
DIMMIT LASALLE McM.
WEBB
ZAPA. UHOG. BROO.
STARR HIDALGO WILLA.
CAM'N.
KENEDY
KLEBERG
NUECES
SAN P.
ARA.
REFU.
CAL.
BEE
LIVE OAK
JIM WELLS
DUVAL
McMULL.
S.SAB.
BROWN
COLE RUNN.
CONC.
J.GREEN
STER.
COKE
COLE
TARR. DAL'AS
PARK.
FALO.
STEPH.
SHACK.
THROC.
YOUNG
HASK.
KNOX
BAYLOR
ARCH.
WICH.
CLAY
MONT.
COOK.
GRAY'N.
FANNIN
LAMAR
RED RIV.
BOWIE
JACK
WISE
DENT'N
COLLIN
HUNT
DEL.
HOPK.
FRA.
TIT.
CP.
MOR.
CASS
RA.
WOOD
UP.SH.
MARI.
HARSON
KAUF.
VAN ZAN.
SMITH
GRE.
RUSK
PANO.
HENDER.
CHER.
ANDER.
NAVARRO
HILL
JOHN.
ELLIS
HOOD
SO.
BOSQ.
COM.
HAMIL.
MILLS
LAM.
CORY'L
McLEN.
LIME
FREE.
LEON
HOUS.
ANGEL
NACO.
SHEL.
S.A.
SAB.
JAS.
N.T.
TYLER
POLK
TRINITY
WALK.
MAD.
GRA.
BRA.
ROB'TS
FALLS
BELL
BURNT
WILLIAM
MILAM
LEE
BURL.
WASH.
FAYET'E
AUS.
COLO.
WALL.
HARD.
HARDIN
LIBER.
S.JAC.
MONT.
JEFF.
OR.
CHAM.
FELB'ND
BRAZ'RA.
GL.
WHART
MATA.
JACKS'N
LAVA.
VICT.
GOLIAD
DEWITT
GONZ.
WILSN.
WARNES
GUAD.
LO.
BAST.
BEXAR
TRAVIS
HAYS
BLANCO
KENDL.
TASCOSA
MEDINA
CAL.
SAN P.
ARA.

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Mexican Fruit Fly

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Texas	1	1	-	1	8	1	8	-	-	-	-	2
Total	1	1	-	1	8	1	8	-	-	-	-	2

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MEXICAN FRUIT FLY

REGION: Southern

PREPARED BY:

PERIOD (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

DATE PREPARED:

STATE AND COUNTY A	VISUAL INSPECTION		TRAPPING					HOST PLANTS SPRAYED I	PROPERTIES SPRAYED J	BOXES OF FRUIT** TREATED K
	PROPERTIES INSPECTED B	PROPERTIES INFESTED C	PROPERTIES TRAPPED* D	TRAPS IN USE* E	TRAP SERVICINGS F	PROPERTIES INFESTED G	FLIES CAUGHT* H			
Texas	286	11	120	2,364	54,244	61	412			707,996
TOTAL THIS PERIOD										
TOTAL FROM JULY 1	286	11	120	2,364	54,244	61	412			707,996

*INDICATE BY G IN PARENTHESIS WHEN FLIES ARE GRAVID.

**EQUIVALENT OF 70 POUND BOX

PPC 7-10 (JUN-58)

*Maximum number during any one month.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

PEACH MOSAIC DISEASE

The peach mosaic disease is known to occur within the Southern Region only in southwestern Arkansas, the southern part of Oklahoma, and in the east and central portions of Texas. The peach mosaic virus disease was first observed in the United States in 1931, and has since been found to be spread by a small mite. Through past years the disease has caused extensive losses to the peach industry.

The program is carried out by federal and state inspectors who visually inspect nurseries, budwood sources, commercial orchards, and dooryard plantings for the presence of the disease. When the disease is found, the property owner is requested to remove the diseased trees, thereby preventing further spread of the virus.

During the 1960 fiscal year, 605,674 trees were inspected on 994 properties in the states of Arkansas, Oklahoma, and Texas. Only 38 diseased trees were found, all of which were destroyed. The incidence of the disease is being kept at a very low point.

PEACH MOSAIC

Region	Prepared by
Southern	

Period (Designate Month, 1-15, 16-31, or 1-31)	Date prepared
Fiscal Year 1960	

STATE AND COUNTY	PROPERTIES			TREES			
	Inspected		Diseased	Inspected		Diseased	Removed
A	Initial B	Repeat C	D	Initial E	Repeat F	G	H
Arkansas	67	0	2	210,168	0	2	2
Oklahoma	459	0	3	14,206	0	4	4
Texas	468	0	26	381,300	0	32	32
Total this period	994	0	31	605,674	0	38	38
Total from July 1							

PPC 7-17
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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PEACH MOSAIC NURSERY INSPECTIONS - F/Y 1960

Regulated Area

State	Number counties	Number nurseries inspected	Number Nurs. trees inspected	Environs inspections			
				Properties		Trees	
				Insp.	Infest.	Insp.	Infect.
Oklahoma	1	2	48,980	379	3	2,225	4
Texas	5	15	249,121	201	0	2,743	0
Total	6	17	298,101	580	3	4,968	4

Non-Regulated Area

State	Number counties	Number nurseries inspected	Number Nurs. trees inspected	Environs inspections			
				Properties		Trees	
				Insp.	Infest.	Insp.	Infect.
Arkansas	3	8	412,300	34	0	972	0
Oklahoma	4	5	513,625	45	0	167	0
Texas	4	8	172,300	31	0	665	0
Total	11	21	1,098,225	110	0	1,804	0

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Peach Mosaic

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Texas	2	1	6									
Total	2	1	6									

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PHONY PEACH

Phony peach, a destructive virus disease of peaches, was first observed in the state of Georgia, about 1890. The disease does not cause early death of the trees but retards the growth of new twigs, which reduces the production and size of the fruit. Generally, within two years after the disease symptoms are visible, marketable fruit loss is nearly 100 percent. The disease occurs in all of our commercial peach-producing states in the Southern Region and is transmitted from diseased to healthy plants by leafhoppers. Both peaches and wild plums are hosts, and in the southeastern part of the United States most of the wild plums are infected.

Program activities include a visual inspection of peach trees in commercial orchards and nurseries with the growers removing the diseased trees. In some states a cooperative wild plum eradication program is carried out in the environs of orchards. This procedure has proved to be effective in keeping the disease incidence at a very low level. During 1960, the incidence of the disease in the areas inspected was only .33 percent for the Region. For the various states, the disease incidence in Fiscal Year 1960 was: Alabama, .24 percent; Arkansas, .008 percent; Georgia, .51 percent; Louisiana, .24 percent; South Carolina, .026 percent; and Texas, .031 percent. Only 416 trees on 4 properties were inspected in Mississippi, and 100 percent of the trees were found to be infected.

Surveys of commercial peach-producing areas were made this year in the states of Alabama, Arkansas, Georgia, Louisiana, Mississippi, South Carolina, and Texas. Over 6,500,000 trees were inspected, resulting in the finding of 21,413 diseased peach trees. In those areas where wild plum eradication programs are being carried out, the growers and the peach industry are cooperating by furnishing labor and chemicals for the application of the herbicides.

Personnel from South Carolina reported on the effectiveness of the phony peach control program by stating, "Without an active phony peach control program, it is doubtful that the peach industry in South Carolina could survive and prosper." South Carolina is the principal peach-producing state in the South.

PHONY PEACH

Region	Prepared by
Southern	

Period (Designate: Month, 1-15, 16-31, or 1-31)	Date prepared
Fiscal Year 1960	

STATE AND COUNTY	PROPERTIES			TREES			
	Inspected		Diseased	Inspected		Diseased	Removed
A	Initial B	Repeat C	D	Initial E	Repeat F	G	H
Alabama	512	0	216	909,874	0	2,097	2,097
Arkansas	104	0	8	287,844	0	23	23
Georgia	320	0	274	3,556,546	0	18,126	18,126
Louisiana	121	1	35	129,263	34,000	311	311
Mississippi	4	0	4	416	0	416	0
S. Carolina	331	0	89	1,366,720	0	361	361
Texas	228	0	16	252,727	0	79	79
Total This Period							
Total From July 1	1,620	1	642	6,303,390	34,000	21,413	20,997

PPC 7-18
FEB-58

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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Phony Peach Nursery Inspections

Fiscal Year 1960

State	No. Cos.	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspections			
				Properties		Trees	
				Inspected	Infested	Inspected	Infected
Alabama	4	17	653,334	85	0	364	0
Arkansas	3	10	403,500	37	0	3,181	0
Georgia	3	3	195,000	14	0	46	0
Texas	4	11	656,190	56	0	513	0
4	14	41	1,908,024	192	0	4,104	0

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Phony Peach

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Alabama	11	5	-	-	-	-	1	-	-	-	-	-
Georgia	2	1	-	-	-	-	-	-	30	-	-	-
Mississippi	1	-	-	-	-	-	-	-	-	-	-	-
S. Carolina	4	3	-	-	1	-	-	-	-	-	2	-
Texas	2	1	6	-	-	-	-	-	-	-	-	-
Total	20	10	6	-	1	-	1	-	30	-	2	-

PINK BOLLWORM

The pink bollworm, a serious cotton pest, was first found in the United States at Hearne, Texas, in 1917. This insect has inflicted extensive damage to the cotton crop in certain areas when allowed to go unchecked. Infestations of pink bollworm have been found in the states of Arizona, Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. The Division cooperates with the cotton-producing states in a program designed to prevent further spread of the pest and to prevent economic damage in the infested areas. Program activities consist of carrying out surveys to determine population density within the infested areas and detect spread of the pest to noninfested areas, enforcing quarantine regulations to prevent spread through movement of infested products, and conducting control operations to eliminate outlying infestations and prevent population buildup in the generally infested area.

Surveys were made in 10 states of the Southern Region, which involved the inspection of 92,295,301 blooms, 91,323 bolls, and 99,325 bushels of gin trash. No new counties were found infested. In Arkansas, no infestations were found in the northeastern part of the state and light infestations were found in only 15 southwestern counties. Only 10 parishes were found infested in Louisiana as compared to 18 the previous year, with less than half as many worms recovered. Inspections in Oklahoma indicated a reduction in field populations. Heavy infestations were found in 18 Texas counties, with medium populations reported from 120 counties and light populations in 69 counties.

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

PINK BOLLWORM REPORT

REGION: Southern

PREPARED BY:

INSTRUCTION: Regional office preparing report for Division should group all counties within a State having identical stalk destruction deadlines into one reporting entry and identify the entry by stalk destruction deadline date in Column A.

PERIOD (Designate 1-15, 16-31, or 1-31): Fiscal Year 1960

DATE PREPARED:

STATE, ZONE, COUNTY, OR LOCALITY	INSPECTION								TOTAL COUNTIES INFESTED	DEGREE OF INFESTATION			
	WITHIN REGULATED AREA				OUTSIDE REGULATED AREA								
	INSPECTED		INFESTED		INSPECTED		INFESTED						
	NO. LOCATIONS	ESTIMATED ACRES	NO. LOCATIONS	ESTIMATED ACRES	NO. LOCATIONS	ESTIMATED ACRES	NO. LOCATIONS	ESTIMATED ACRES		TRACE	LIGHT	MEDIUM	HEAVY
A	B	C	D	E	F	G	H	I	J	K	L	M	N
Alabama					752	465,693							
Arkansas	3542	267,319	24	34,863	7202	1,038,962			15				
Florida					27	6,928							
Georgia					961	205,645							
Louisiana	684	108,697	26	25,579	226	177,076			10				
Mississippi					7231	1,031,908							
Oklahoma	1033	598,588	139	488,317					46				
South Carolina					41	371							
Tennessee					2321	119,521							
Texas	7795	3,157,850	1507	1,794,486					176				
TOTAL THIS PERIOD													
TOTAL FROM JULY 1	13054	4,132,454	1696	2,343,245	18761	3,046,104	0	0	247				

PPC Form 7-20
Sept 1958

PINK BOLLWORM

* Regional office in preparing report for Division should group all counties within a State having identical stalk destruction deadlines into one reporting entry and identify the entry by stalk destruction deadline date.

REGION: Southern

PREPARED BY:

PERIOD (Designate 1-15, 16-31, or 1-31): Fiscal Year 1960

DATE PREPARED:

STATE, ZONE, COUNTY, OR LOCALITY * (A)	CULTURAL CONTROL					REGULATORY CONTROL		
	STALK DESTRUCTION DEADLINE (B)	ACREAGE PLANTED (EST.) (C)	ACRES STALKS DESTROYED THIS PERIOD (D)	ACRES STALKS DESTROYED THIS SEASON (E)	FARM CALLS (F)	NO. REGULATED ESTABLISHMENTS VISITED (No. Visits) (G)	NUMBER VIOLATIONS FOUND (H)	TONS OF REGULATED PRODUCTS MOVED (I)
Arkansas		1,306,281		1,306,261	2,220	6,550	8	1,154,983.00
Louisiana		169,291		169,291	20,000	3,620	322	94,347.00
Oklahoma		689,353		676,326	0	2,444	3	119,187.65
Texas		2,265,484		2,265,484	21,477	19,839	174	1,973,044.29
TOTAL THIS PERIOD								
TOTAL FROM JULY 1	XXX	4,430,409	XXX	4,417,362	43,697	32,453	507	3,341,561.94

PPC Form 7-20
May 1958

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

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INSPECTION SUMMARY

Program: Pink Bollworm
Region: Southern

Fiscal Year 1960
(By 6-Month Period)

State	Inspection, by type							
	Gin trash		Lint cleaner		Bolls		Blooms	
	Number		Number		Number		Number	
	Bu.	PBW	Insp.	PBW	Bolls	PBW	Blooms	PBW
Period: July 1 - December 31, 1959:								
Alabama	953	0	387	0	9,086	0	34,200	0
Arkansas	47,982	62	3,239	8	0	0	165,271	0
Florida	103	0	0	0	4,053	0	0	0
Georgia	2,875	0	291	0	0	0	0	0
Louisiana	12,955	64	949	37	*	*	438,494	0
Mississippi	19,457	0	2,911	0	9,800	0	91,167,405	0
Oklahoma	2,224	6,367	698	3,549	513	1	88,173	9
South Carolina	706	0	0	0	100	0	0	0
Tennessee	10,435	0	66	0	0	0	0	0
Texas	1,635	131,749	3,485	36,279	30,148	5,594	94	22,270
Total	99,325	138,242	12,026	39,873	53,700	5,595	91,893,637	22,279
Period: January 1 - June 30, 1960:								
Alabama	0	0	0	0	0	0	0	0
Arkansas	0	0	0	0	0	0	0	0
Florida	0	0	0	0	** 9	0	11	0
Georgia	0	0	0	0	0	0	0	0
Louisiana	0	0	0	0	**	**	358,731	0
Mississippi	0	0	0	0	0	0	42,435	0
Oklahoma	0	0	36	66	2,422	17	0	0
South Carolina	0	0	0	0	0	0	0	0
Tennessee	0	0	0	0	0	0	0	0
Texas	0	0	0	0	35,192	1,089	487	111,950
Total	0	0	36	66	37,623	1,106	401,664	111,950
GRAND TOTAL	99,325	138,242	12,062	39,939	91,323	6,701	92,295,301	134,229

* La. - Okra pods inspected - 230 (first half F/Y) - 11 PBW.
** Fla. - Okra pods inspected - 40 (second half F/Y) - No PBW.
La. - Okra pods inspected - 200 (second half F/Y) - No PBW.

REGULATORY SUMMARY

Program Pink Bollworm
Region Southern

Fiscal Year 1960

	Arkansas	Louisiana	Oklahoma	Texas	Total
Counties under quarantine	55	26	77	254	412
Estimated acres in cotton	267,319	166,630	689,353	6,730,298	7,853,600
Estimated growers	25,875	8,577	24,601	180,498	239,551
Visits to processing plants	6,550	3,620	2,444	19,839	32,453
Permits for movement of cotton and cotton products	17,210	4,453	563	* 5,012	27,238
Establishments under dealer-carrier permit:					
Cotton gins	136	101	231	14	482
Oil mills	15	9	7	42	73
Compresses and warehouses	48	21	27	0	96
Fumigation plants	0	1	1	34	36
Vacuum fumigation plants	0	0	0	1	1
Other handlers and dealers	273	2	18	24	317
Bales cotton ginned	291,284	162,285	381,000	4,424,665	5,259,234
Gins with heaters to treat seed	33	93	0	1	127
Mechanical cotton pickers fumigated	8	11	0	222	241

* Texas - In addition, there were issued:
72,990 okra certificates
17,758 cottonseed tags
40,542 rubber stamp imprints on floral kits

ROAD PATROL SUMMARY

Program: Pink Bollworm
Region: Southern

Fiscal Year 1960

Type Operation	Number			
Inspected:	Arkansas	Louisiana	Mississippi	Total
Picker Crews	5,798	68	Quarantine Stations along Mississippi River planned and directed by Mississippi State Plant Board.	5,866
Picking Sacks	5,812	407		6,219
Bolls	64,564	3,380		67,944
Cottonseed	27,440,328#	59.25#		27,440,387.25#
Seed Cotton	10,698,000#	0		10,698,000 #
Okra Containers	*	9,707		9,707 *
Passenger Cars and Trucks	819,750	395,784		1,215,534
Cargo and Produce Trucks	*	10,321		10,321*
Cottonseed Trucks	4,475	171		4,646
Turned Back:				
Trucks	0	7		7
Mechanical Pickers	7	3		10
Passed:				
Mechanical Pickers	41	67		108
Interceptions	1,158	423		1,581
Number Live Pink Bollworms	135	312		447

* Number okra containers and cargo and produce trucks inspected (Ark.) not available.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Pink Bollworm

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Arkansas	7	6	90	-	-	-	2	-	-	-	-	-
Florida	-	-	-	-	-	-	-	1	-	-	-	-
Louisiana	7	5	-	-	8	-	12	-	50	2,000	1,500	1
Mississippi	-	-	-	-	-	-	-	-	75	-	-	-
Oklahoma	3	34	11	-	2	-	8	-	-	6,000	-	1
Tennessee	8	2	4	-	-	-	-	-	25	875	-	-
Texas	38	9	25	-	8	4	69	1	60	1,519	467	4
Total	63	56	130	-	18	4	91	2	210	10,394	1,967	6

SOYBEAN CYST NEMATODE

The soybean cyst nematode was first found in the United States in 1954, in a small truck crop and bulb-growing area near Wilmington, North Carolina. At that time several fields showed severe damage. Immediate action was taken to prevent further spread of the pest since it appeared capable of inflicting heavy losses to our soybean industry. In 1956, the pest was found to be present in the Mississippi River Valley. Infestations are now known to exist in limited portions of Arkansas, Illinois, Kentucky, Mississippi, Missouri, North Carolina, Tennessee, and Virginia. In 1958, a number of fields in the Mississippi River Valley were severely damaged by this cyst-type nematode. No effective eradication measures have been developed; however, a grower with infested land can continue the production of soybeans on a profitable basis by following a good crop rotation system.

The program is carried out by conducting effective surveys for the pest, preventing spread through regulatory action, and advising growers to follow crop rotation practices.

During the year, soil surveys were carried out on 11,457 properties involving 387,000 acres. In addition, 516,181 acres on 13,295 properties were surveyed by the plant inspection method. Only 115 new infestations were found throughout the year. Infestations were found for the first time in Craighead County, Arkansas, Crockett and Gibson Counties, Tennessee, and Union and Tyrrell Counties, North Carolina.

In the state of Mississippi, the infestation previously found near Penton was delimited and only 22 contiguous acres found infested. This acreage and an adjacent 98 acres of land were fumigated with DD in an effort to eradicate the infestation.

Study plots have been set up in North Carolina and Tennessee in an attempt to find practical means of eradicating or controlling infestations. Research workers are in the process of developing resistant, commercially acceptable varieties of soybeans.

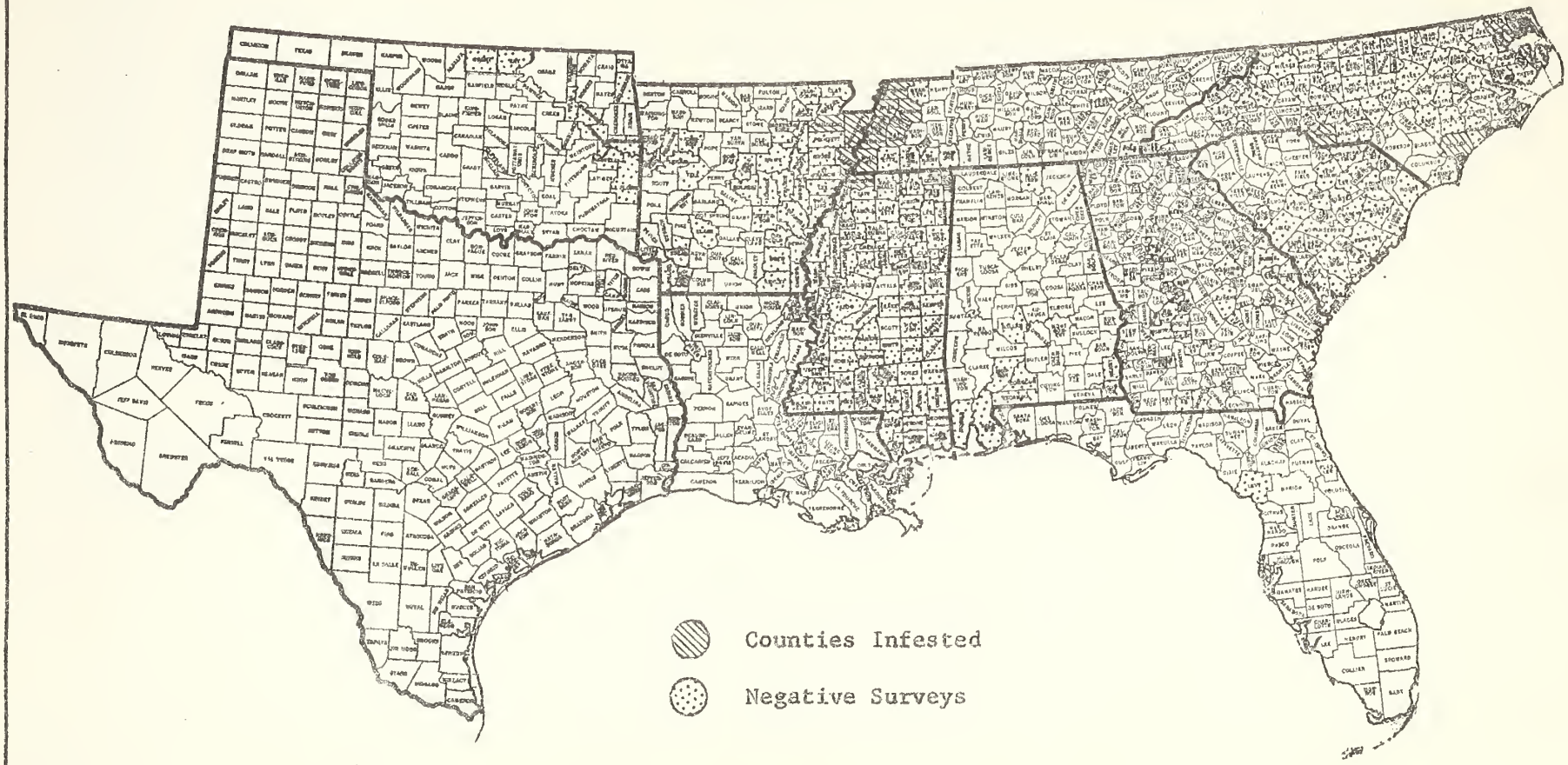
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE - PLANT PEST CONTROL DIVISION

SOUTHERN REGION

SOYBEAN CYST NEMATODE

Fiscal Year 1960



Agriculture - Dodge Printing Co. Gulfport, Miss.

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SOYBEAN CYST NEMATODE

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date prepared:

STATE AND COUNTIES A	SOIL SURVEY		PLANT INSPECTION		INFESTATIONS CONFIRMED	
	Properties B	Acres C	Properties D	Acres E	Properties F	Acres G
Alabama	335	18,843	544	17,568	0	0
Arkansas	6,783	215,115	0	0	34	1,155
Florida	2	34	0	0	0	0
Georgia	138	2,986	225	4,917	0	0
Louisiana	18	1,408	0	0	0	0
Mississippi	1,300	53,693	29	10,300	0	0
North Carolina	736	14,771	5,885	180,300	28	1,356
Oklahoma	53	1,125	7	140	0	0
South Carolina	408	19,407	6,472	300,005	0	0
Tennessee	1,684	59,650	133	2,951	53	2,887
Total This Period						
Total From July 1	11,457	387,032	13,295	516,181	115	5,398
Total From Beginning of Program	31,341	1,082,726	47,555	1,136,888	557	24,684

PPC 7-12
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Soybean Cyst Nematode

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Arkansas	-	-	-	-	-	-	-	-	500	-	500	-
Georgia	-	-	2	-	-	-	-	1	41	-	-	-
Mississippi	-	-	-	-	-	-	-	-	150	-	-	-
N. Carolina	11	6	11	-	-	-	-	-	*	*	*	-
Tennessee	7	20	29	-	-	-	-	-	-	1,375	250	-
Total	18	26	42	-	-	-	-	1	691	1,375	750	-

* Used frequently - numbers not available.

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SWEETPOTATO WEEVIL

Sweetpotato weevil eradication and control activities were conducted during fiscal year 1960, in the states of Alabama, Florida, Georgia, Louisiana, Mississippi, South Carolina, and with limited assistance extended to Texas.

Surveys to the extent of 83,447 inspections were made in 135 counties. A total of 775 weevil infestations was found in 42 counties with negative surveys in 93 counties. All infestations found were in eradication areas, and no new counties were found to be infested for the second consecutive year. Weevil damage was extremely light with a mere survival level only in native hosts in South Carolina.

Quarantine restrictions were removed from 592 properties in eradication zones including formerly infested properties in eight complete counties. Control operations included the cleaning of 9,721 storages, 10,505 seedbeds, and 79,776 acres. Insecticides were applied to 1,279 seed beds, 12,525 acres, and 1,698,150 bushels of sweetpotatoes.

Approximately eight million bushels of sweetpotatoes were shipped under certification from the infested areas during the fiscal year.

SWEETPOTATO WEEVIL

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date prepared:

STATE COUNTY LOCALITY A	SURVEYS Properties Inspections B	Infested C	Released D	Active at Close E	CONTROL Cleaned Storage & Kilns F	Seedbeds G	Acres H	Insecticides Applied Seedbeds I	Acres J	Dusted Bushels K
Alabama	8,710	109	25	119	352	350	5,493	215	2,578	18,405
Florida	6	0	0	468	0	0	0	0	0	0
Georgia	2,902	77	50	82	23	8	214	20	786.75	0
Louisiana	63,095	344	475	510	9,021	9,816	74,063	1,043	8,643	1,679,744
Mississippi	3,526	64	39	155	1	0	2	0	0	0
South Carolina	1,662	0	3	8	0	0	0	0	357	0
Texas	3,546	181	0	181	324	331	4	1	160	1
Total This Period	83,447	775	592	1,523	9,721	10,505	79,776	1,279	12,524.75	1,698,150
Total From July 1										

PPC 7-19
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Sweetpotato Weevil

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Alabama	2	2	-	-	-	-	1	-	-	265	4	-
Florida	7	2	-	-	-	-	-	-	50	-	-	-
Georgia	18	17	1	-	4	-	5	2	146	53	11	-
Louisiana	12	5	-	-	2	-	8	-	-	1,500	6	1
Mississippi	-	-	-	-	-	-	-	-	125	-	-	-
S. Carolina	3	2	-	-	3	1	-	-	20	78	3	-
Total	42	28	1	-	9	1	14	2	341	1,896	24	1

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ERADICATION OF THE SUBTERRANEAN TERMITE *Coptotermes crassus*

In July 1956, specimens of the subterranean termite *Coptotermes crassus* were first reported in the United States in a drydock at Houston, Texas. During 1956 and 1957, extensive control work was conducted using a 2 percent chlordane spray and by removing and burning infested timbers. In 1958, an intensive survey revealed that the infestation had spread throughout the drydock and to many locations along the pier and wharf area. Extensive damage was observed. Since the insect was found to be established and capable of causing extensive damage in this country, it was determined that the infestation should be eradicated by fumigating all infested sites.

Fumigation began on July 20, 1959, and was completed on September 9, 1959. A total of 2,611,223 cubic feet was fumigated using 20,400 pounds of methyl bromide. Although no evidence of living termites was observed following fumigation, the area should be carefully inspected during the next several years.

WHITE-FRINGED BEETLE

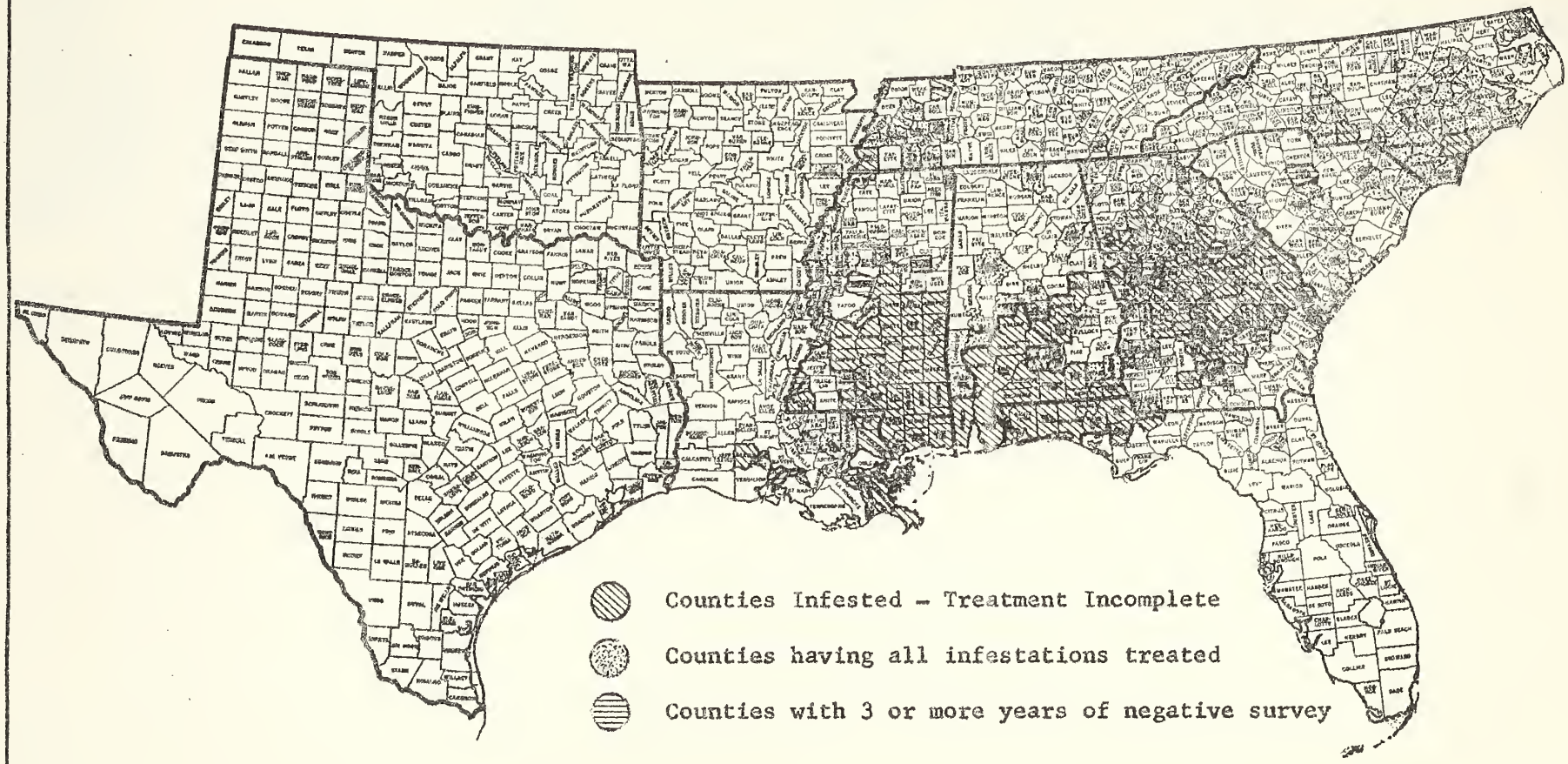
The White-fringed beetle, a native of Argentina, Chile, and Uruguay, in South America, was first reported in the United States in 1936. The insect causes severe damage to a wide variety of field crops and ornamental plants. Most of the damage is caused by the larvae of the insect, which feeds on the roots of plants.

Since 1936, infestations have been found on a total of 968,368 acres in 227 counties of the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. All known infested acreage has been treated in 105 of these counties. No specimens have been recovered in 13 counties for three or more consecutive years.

During the year, infestations have been found on 270,585 acres. Infestations were found for the first time in two counties in Alabama, four in Georgia, one each in Louisiana, Arkansas, and North Carolina. Reinfestations were also found in two counties in Georgia.

On the 968,368 acres classified as infested, no specimens were found during the year on 33 percent of the acreage, light infestations were found on 49 percent of the area, moderate populations on 14 percent, and heavy populations on 4 percent. About 70 percent of the total acreage found to be infested requires treatment. Regulatory activities continue to require a considerable amount of the inspectors' time, especially in the handling of nursery stock, as well as peanuts, Irish potatoes, soybeans, and cotton grown within the regulated area.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE - PLANT PEST CONTROL DIVISION
SOUTHERN REGION
WHITE-FRINGED BEETLE
Fiscal Year 1960



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WHITE-FRINGED BEETLE

Region	Prepared by
Period (Designate: Month, 1-15, 16-31, or 1-31) FISCAL YEAR 1960	Date prepared

STATE COUNTY LOCALITY A	SITES INSPECTED Nursery B	SITES INSPECTED Other C	ACRES OF NEW INFESTATION Nursery D	Farmland Tilled E	Farmland Untilled* F	Woodland G	Industrial & City H	Total I
ALABAMA	922	15,182	1	10,336	5,789	5,740	2,481	24,347
ARKANSAS	0	321	0	900	80	0	70	1,050
FLORIDA	28	3,332	0	16,161	13,285	13,006	1,318	43,770
GEORGIA	177	11,428	241	63,239	26,497	9,370	58,952	158,299
LOUISIANA	163	2,253	0	140	328	0	48	516
MISSISSIPPI	386	6,659	4	7,669	9,780	5,741	15,332	38,526
N. CAROLINA	94	3,655	60	1,155	370	13	1,233	2,831
S. CAROLINA	90	1,709	1	114	83	0	268	466
TENNESSEE	76	4,039	0	60	30	38	652	780
TEXAS	1	54	0	0	0	0	0	0
Total This Period								
Total From July 1	1,937	48,632	307	99,774	56,242	33,908	80,354	270,585
Total from Beginning of Program	XXX	XXX	2,377	334,060	174,468	184,861	272,602	968,368

* Woodland excluded.

PPC 7-13 (Mar.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

WHITE-FRINGED BEETLE

Region	Prepared by
Period *(Designate: Month, 1-15, 16-31, or 1-31)* **FISCAL YEAR 1960**	Date prepared

STATE COUNTY LOCALITY A	Nursery B	ACRES TREATED WITH INSECTICIDES (First Treatment)						ACRES OF RETREATMENT I
		FARMLAND (Include Woodland)			NON-FARMLAND		Foliage H	
		With Ground Equipment		With Aircraft E	Surface F	With Aircraft G		
		Broadcast Insecticide Only C	With Fertilizer D					
ALABAMA	926	11,940	11,570	19,842	5,545	1,437	1,542	433
ARKANSAS	0	0	0	1,000	2	50	0	0
FLORIDA	13	6,698	672	0	5,300	4,500	0	144
GEORGIA	47.64	7,527	190	19,564	5,362	2,383	9,558	200
LOUISIANA	38	463	0	1,836	2,908	905	0	1
MISSISSIPPI	474	332	0	0	2,898	0	501	146
N. CAROLINA	144.50	1,459	0	0	6,534	0	0	131
S. CAROLINA	3	129	600	0	335	0	0	33
TENNESSEE	6	461	0	0	2,162	0	0	2
Total This Period								
Total From July 1	1,652.14	29,009	13,032	42,242	31,046	9,275	11,601	1,090
Total from Beginning of Program								

PPC 7-13a
(Mar.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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Annual Report Table

STATUS OF POPULATIONS - JUNE 30, 1960

Program: White-Fringed Beetle
REGION:
~~STATE~~: Southern

County	No specimens found		Light populations		Moderate populations		Heavy populations		Total	
	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent	Acres	Per-cent
Alabama	64,988	23	188,652	65	28,559	10	6,087	2	288,286	100
Arkansas	0	0	1,050	100	0	0	0	0	1,050	100
Florida	46,835	34	38,374	28	36,968	26	16,821	12	138,998	100
Georgia	107,753	37	137,843	47	40,746	14	4,881	2	291,223	100
Louisiana	23,313	98	505	2	11	0*	0	0	23,829	100
Mississippi	48,591	27	90,928	51	31,737	18	6,699	4	177,955	100
N. Carolina	14,735	49	15,252	51	0	0	0	0	29,987	100
S. Carolina	4,876	91	498	9	0	0	0	0	5,374	100
Tennessee	4,796	41	5,421	46	788	7	661	6	11,666	100
* Less than ½ percent										
Total	315,887	33	478,523	49	138,809	14	35,149	4	968,368	100

Gulfport, Miss.
May 1960

Annual Report Table

INFESTATION SUMMARY

Program: White-Fringed Beetle

Fiscal Year 1960

State: Southern

County	Infested acres			
	Prior to this F/Y	Found during this F/Y	Released this F/Y*	Total (June 30, 1960)
ALABAMA	263,939	24,347	0	288,286
ARKANSAS	0	1,050	0	1,050
FLORIDA	95,228	43,770	0	138,998
GEORGIA	132,932	158,299	8	291,223
LOUISIANA	23,438	516	125	23,829
MISSISSIPPI	139,433	38,526	4	177,955
N. CAROLINA	27,156	2,831	0	29,987
S. CAROLINA	4,908	466	0	5,374
TENNESSEE	10,886	780	0	11,666
Total	697,920	270,585	137	968,368

*Infestation considered eradicated (negative survey for 3 or more consecutive years).

Gulfport, Miss.
May 1960

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program White-fringed Beetle

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Alabama	72	75	2	-	5	-	2	8	50	18	6	2
Florida	8	8	-	-	-	-	-	-	150	-	1	-
Georgia	33	23	18	-	19	2	23	3	394	445	75	1
Louisiana	4	4	4	-	-	-	2	2	12	-	6	-
Mississippi	-	-	-	-	-	-	-	5	150	-	-	-
North Carolina	11	8	9	2	-	-	10	-	48	-	-	-
S. Carolina	2	1	12	-	1	1	-	-	250	30	6	-
Tennessee	6	16	26	-	-	2	-	-	20	1190	37	-
Total	136	135	71	2	25	5	37	18	1074	1683	131	3

WILD COTTON

In the southern part of Florida, and the adjacent off-shore islands, wild cotton plants grow in certain restricted areas. These plants are a host of the pink bollworm, and infestations have been known to occur in areas of such plantings. Unless controlled, the pink bollworm population can build up and easily spread to the commercial cotton-producing areas to the north. The Wild Cotton Eradication Program is carried out by inspecting the locations which can support the growth of wild cotton plants. When such plants are found, they as well as all of the fruiting forms are destroyed. Surveys are made also in the southern part of the state for ornamental dooryard cotton plants and of previously known infested plantings of hibiscus.

During 1960, inspections were made of 15,000 acres of land known to be capable of producing wild cotton plants in 11 south Florida counties. From this area, 22,341 seedlings and 1,684 plants with maturing fruit were destroyed. Five locations were found infested in southern Monroe County, from which 16 specimens were recovered. The hibiscus plants on Plantation Key which were infested previously were kept under observation. The inspection of 20,369 hibiscus blooms from this area revealed that light infestations of the pink bollworm recurred four times in September 1959. Applications of insecticide held the infestation to an undetectable level through the end of June 1960.

WILD COTTON

REGION	PREPARED BY
Southern	
PERIOD (Designate Month, 1-15, 16-31, or 1-31)	DATE PREPARED
Fiscal Year 1960	

STATE, COUNTY, & CODE NUMBER A	INSPECTION OF BLOOMS, SQUARES, & BOLLS		ACRES CLEANED		PLANTS DESTROYED	
	NUMBER B	INFESTATIONS C	THIS MONTH D	THIS SEASON E	SEEDLING F	FRUITING G
Florida	44,004	6	-	15,127.87	22,341	1,684
TOTAL THIS PERIOD						
TOTAL FROM JULY 1	44,004	6	-	15,127.87	22,341	1,684

PPC FORM 7-14
FEB 1958

U. S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Wild Cotton

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	-	1	-	-	-	-	9	-	-	-	-	1
Total	-	1	-	-	-	-	9	-	-	-	-	1

WITCHWEED

Witchweed, a parasitic plant which attacks the host plant roots by means of haustoria, attacks a wide range of grasses but is a severe pest primarily of corn and closely related species. The longevity of the seed under natural conditions has not been determined but is believed to be approximately 20 years or more. It is believed to constitute a more serious threat to the nation's corn crop than the European corn borer.

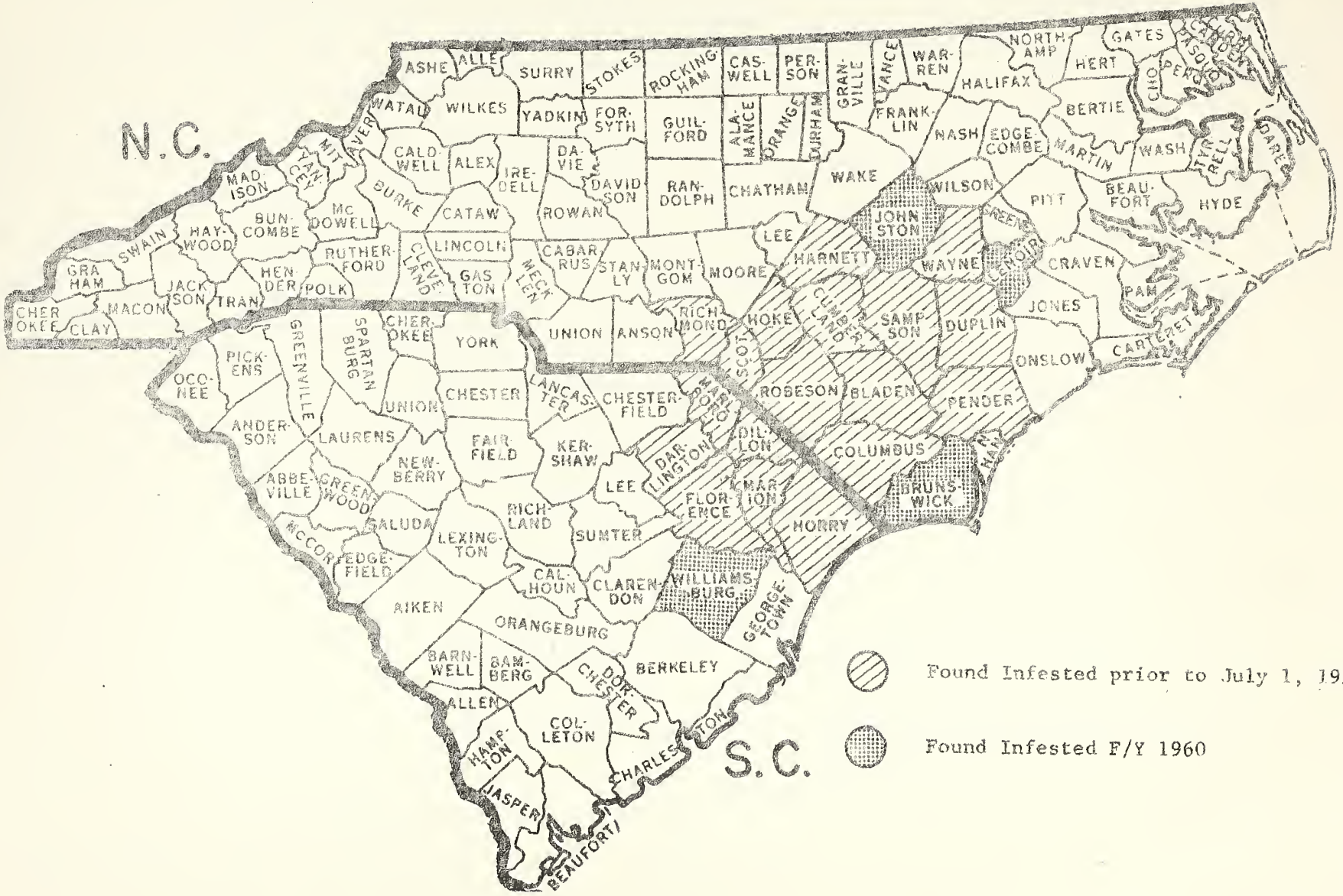
Witchweed was first known to occur in the Western Hemisphere in the Carolinas in 1956. Subsequent surveys have shown that infestations in the Southern Region are present in 15 counties of North Carolina and 7 counties in South Carolina. Infestations occur on over 116,000 acres distributed over more than 6,000 properties. Eradication treatments are being applied to all known infested properties.

During the fiscal year, there were 3 major types of treatment used to eliminate the pest from infested land: (1) Cultural control consisting of catch crops, trap crops, or a combination, (2) Chemical control using 2,4-D or Fenac, and (3) Mechanical control, consisting of discing, hoeing, or similar operations. These methods, including repeat operations, were applied to an aggregate of about one-quarter million acres during the fiscal year.

State and Federal quarantines designed to reduce the risk of spread are in effect. Particular emphasis is placed on traffic which may result in a long distance spread of seed or plants. Overall quarantine cooperation has been very good.

A Methods Improvement Laboratory is maintained for the purpose of developing improved chemical and cultural eradication treatments.

WITCHWEED - FISCAL YEAR 1960



WITCHWEED (STRIGA)

Region: Southern

Prepared by:

Period (Designate: Month, 1-15, 16-31, or 1-31): Fiscal Year 1960

Date prepared:

STATE COUNTY LOCALITY A	SURVEY		INFESTATIONS FOUND			CONTROL			
				Acres		Chemical		Cultural	
	Properties B	Acres C	Properties D	Cultivated E	Non-cultivated F	Properties G	Acres H	Properties I	Acres J
Alabama	2,849	49,355							
Arkansas	259	4,922							
Florida	2,013	76,574							
Georgia	2,282	27,697							
Louisiana	2,673	49,099							
Mississippi	4,481	70,912							
North Carolina	30,729	604,394	1,690	26,738	445	16,316	166,366	532	7,030.3
Oklahoma	352	8,016							
South Carolina	12,599	407,513	460	11,244	1,104	7,021	66,076	243	4,743.6
Tennessee	2,195	21,245							
Texas	1,710	23,311							
Total This Period									
Total From July 1	62,142	1,343,038	2,150	37,982	1,549	23,337	232,442	775	11,773.9
Total From Beginning of Program	149,523	4,475,179	6,097	98,129	18,559	26,166	247,692	-	-

Report: Total counties by States infested from beginning of program

PPC 7-21
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

Program Witchweed

SUMMARY OF ASSOCIATED ACTIVITIES

Prepared by: _____

Region Southern

Fiscal year 1960

Area	Public Meetings Attended	Presentations					Feature & News Stories*	Extent These Aids Were Used				Special Reports
		Talks	Slides	Films	Radio	TV		Exhibits	Bul.	Cir.	Infest. Maps & Posters	
Florida	1	1	1	-	-	1	-	1	125	75	1	-
Georgia	1	1	-	-	-	-	-	-	39	150	-	-
Mississippi	-	-	-	-	-	-	-	-	400	-	-	-
N. Carolina	54	36	36	4	1	-	35	2	855	100	13	-
S. Carolina	41	30	64	1	13	8	19	2	6,920	225	27	-
Tennessee	4	-	-	-	-	-	-	-	-	760	-	-
Texas	-	-	2	-	-	-	-	-	300	-	-	-
Total	101	68	103	5	14	9	54	5	8,639	1,310	41	-

PLANT PEST CONTROL

COOPERATIVE PROGRAMS

WESTERN REGION

FISCAL YEAR

1960

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION

PLANT PEST CONTROL

COOPERATIVE

PROGRAMS

FISCAL YEAR

1960

OAKLAND, CALIFORNIA AUGUST 1960

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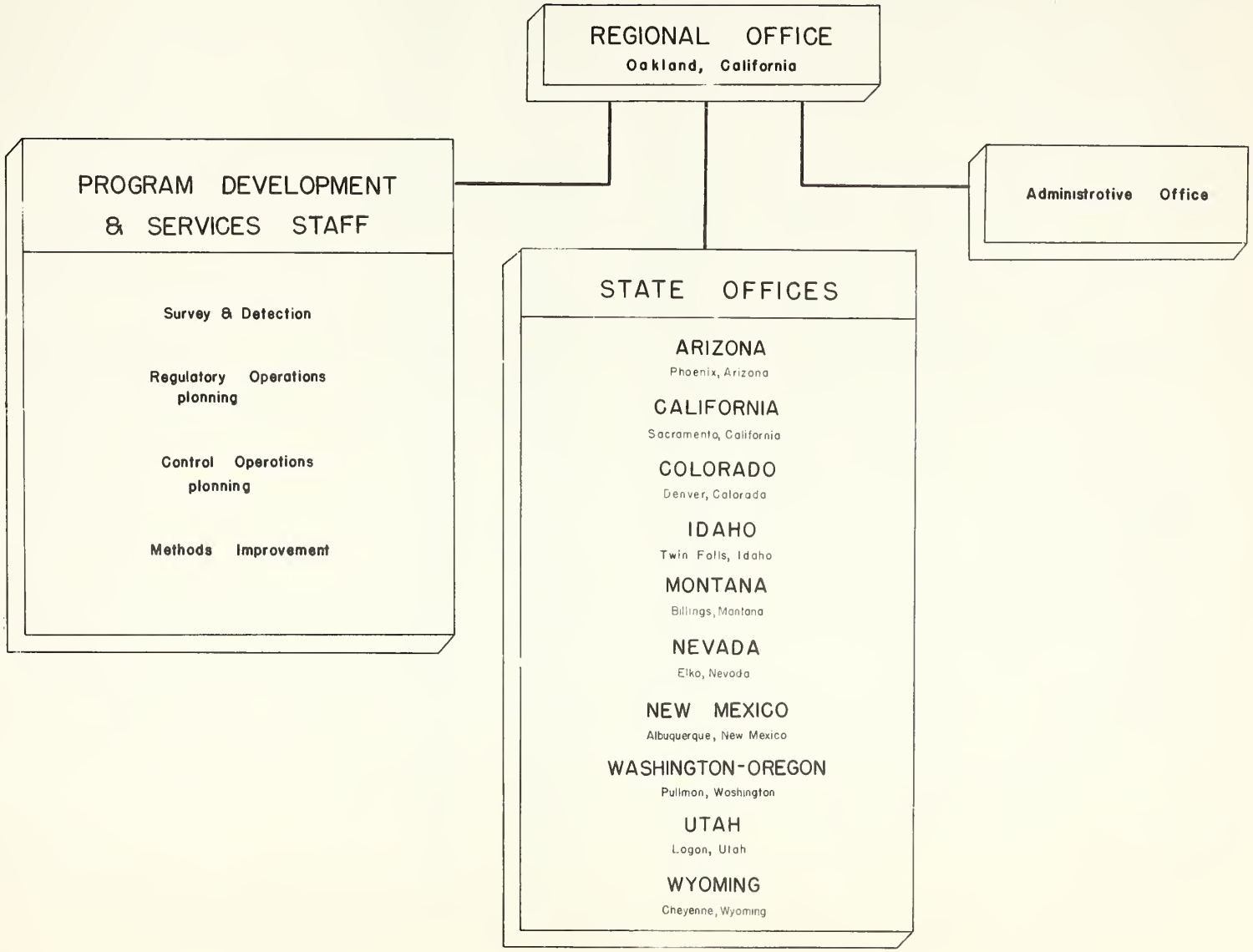
PLANT PEST CONTROL COOPERATIVE PROGRAMS

The Western Region is responsible for the plant pest control work of the Division in the 11 Western States. This effort includes survey, regulatory, control, and eradication operations. Under conferred authority it directs the accomplishment of 10 principal cooperative programs in this area. Our work is done with affected states, and equally importantly, with other Federal agencies, particularly those which manage vast acreages in this Region.

In addition to the principal programs, Barberry Eradication, Grasshopper Control, Golden Nematode Survey, Hall Scale Eradication, Khapra Beetle Eradication, Mexican Fruit Fly Control, Mormon Cricket Control, Peach Mosaic Disease Control, Pink Bollworm Control, and Plant Pest Survey, it also directs the jointly undertaken surveys for such unestablished and sometimes undiscovered pests as alfombrilla, potato psyllid, exotic fruit flies, etc.

On occasion it is necessary to promptly suppress the first occurrence of a threatening invader such as the Japanese beetle, oriental fruit fly, Mediterranean fruit fly, witchweed, or hoja blanca. Then the Region supports interested cooperators by joining in implementing and directing the promptest survey and suppressive measures. Many of our control activities utilize the latest research-recommended control materials and means of application. This circumstance makes advisable the closest cooperation with our research advisors and with the Division's Methods Improvement Section. In handling the category of threatening, but unestablished pests, we are immeasureably aided by the other four regions of the Division, each of which promptly alerts us to possible mutual trouble and (based upon its experience) advises how best to cope with it.

WESTERN PLANT PEST CONTROL REGION



BARBERRY ERADICATION

Four states in the Western Region cooperate in this activity. They are Colorado, Montana, Washington, and Wyoming. In addition, Oregon and Idaho have active interests in certain program phases. Wyoming is on maintenance, but in the spring of 1960 a large *Berberis amurensis* was found at the ARS Horticultural Field Station at Cheyenne. Station personnel destroyed the bush at our request. Susceptible "Sherman Red Leaf" barberry plants were found in Torrington by an inspector from the Central Plant Pest Control Region. The Wyoming Department of Agriculture was notified and will destroy the bushes. In Colorado, 728,768 *B. fendleri* and 184 *B. vulgaris* bushes were destroyed in working 120 square miles. Work remaining in Colorado is principally rework of native barberry areas in the southwestern part of the State. In Montana, 20 additional square miles were placed on maintenance. The state-employed scout found 25 *B. vulgaris* bushes on one new and seven old properties. Future work in that State will be in rough areas having much native brush, making the work difficult. Only 39 square miles remain to be covered.

In Washington 125 barberry bushes were destroyed on 15 old and 28 new properties encompassing 104 square miles of territory. As in Montana, heavy underbrush makes survey progress quite slow, particularly in Stevens and Spokane Counties.

Comprehensive stem rust surveys were made in eastern Washington, and observations were continued in other wheat growing areas of the Region to determine whether rust was present. Stem rust occurrence was at a minimum and losses were very light.

Nurseries and premises of dealers shipping barberries interstate were inspected in states of this Region by Division personnel in accordance with Federal Quarantine No. 38.

PROPERTIES CLEARED AND BARBERRY BUSHES DESTROYED

Barberry Eradication

Fiscal Year 1960

State	Square Miles Worked		Properties Found Infested		Old Properties Inspected	Bushes Destroyed		Inspections	
	Initial	Rework	New	Old		Common	Native	Nursery	Dealer
California	0	0	0	0	0	0	0	13	0
Colorado	9	111	5	120	134	184	728,768	6	0
Montana	0	20	1	7	46	25	0	3	1
Oregon	0	0	0	0	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0	0
Washington	41	63	28	15	163	125	0	5	0
Wyoming	5	0	2	0	0	2,010	0	0	0
Totals	55	194	36	142	343	2,344	728,768	27	1

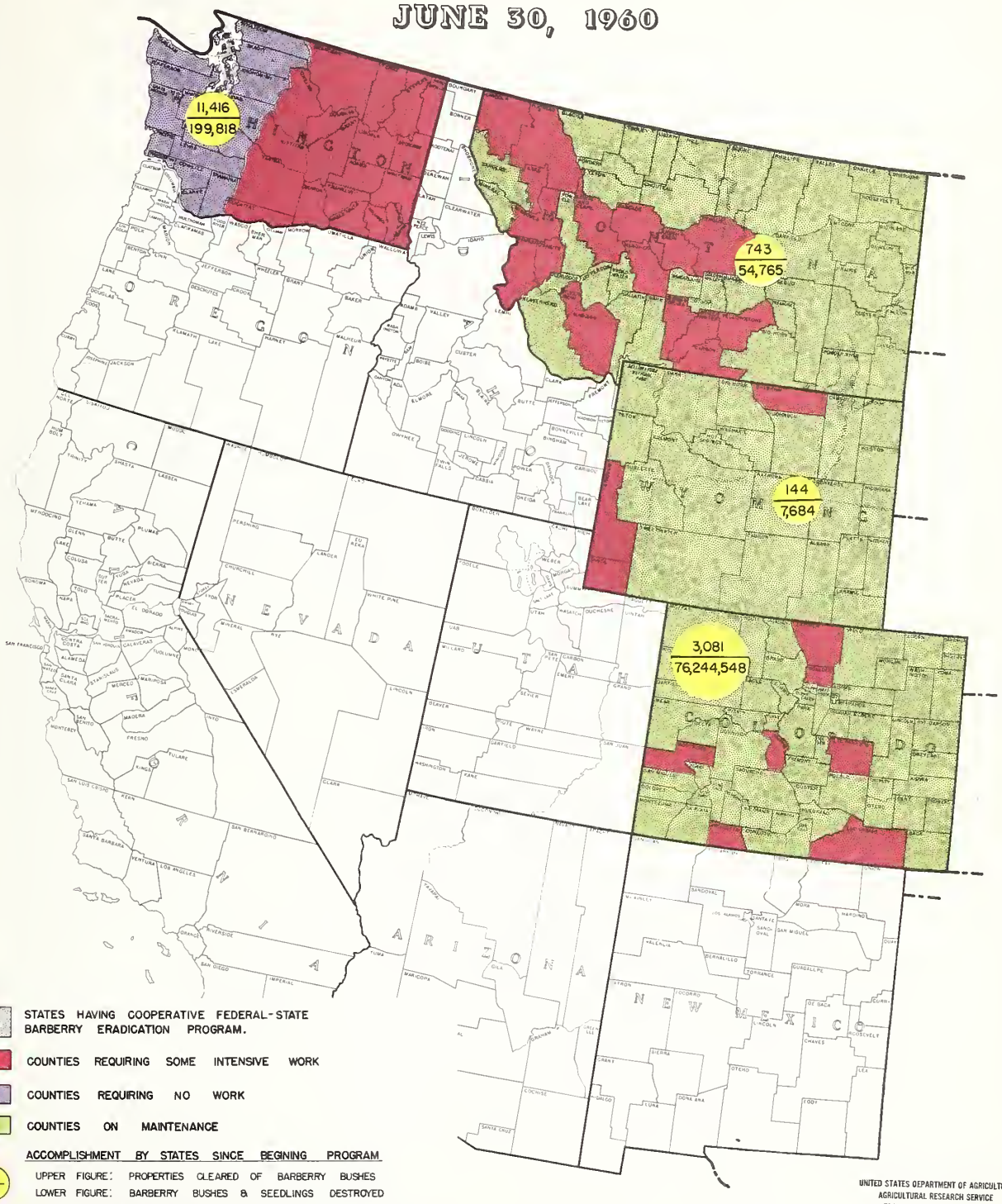
PRESENT STATUS, PROGRESS, AND FUTURE REQUIREMENTS, 1918 - 1960

Fiscal Year 1960

	SQUARE MILES										PROPERTIES			BARBERRY BUSHES DESTROYED		
	Total in State to be Worked	Numbered Covered				Number Requiring Work One or More Times				Number Requiring No Future Work	Total Found To Date	Number Needing One or More Reinspections	Number Completed	Common	Native	Total
		Initial Work		Rework		Farm-stead		Intensive								
		Farm-stead	Inten-sive	Farm-stead	Inten-sive	Initial	Rework	Initial	Rework							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Colo.	74,696	74,036	5,609	9,148	5,098	0	0	0	192	74,504	3,084	378	2,706	102,346	76,142,202	76,244,548
Mont.	146,742	146,742	426	6,064	730	0	0	0	59	146,257	743	95	647	54,765	0	54,765
Wash.	29,872	29,872	2,604	203	1,706	0	0	81	855	28,936	11,416	11,094	322	199,818	0	199,818
Wyo.	94,492	94,492	558	7,367	1,267	0	0	0	10	94,481	144	21	122	7,684	0	7,684
TOTALS	345,802	345,142	9,197	22,782	8,801	0	0	81	1,116	344,178	15,387	11,588	3,797	364,613	76,142,202	76,506,815

BARBERRY ERADICATION

JUNE 30, 1960



STATES HAVING COOPERATIVE FEDERAL-STATE BARBERRY ERADICATION PROGRAM.

COUNTIES REQUIRING SOME INTENSIVE WORK

COUNTIES REQUIRING NO WORK

COUNTIES ON MAINTENANCE

ACCOMPLISHMENT BY STATES SINCE BEGINING PROGRAM

UPPER FIGURE: PROPERTIES CLEARED OF BARBERRY BUSHES
LOWER FIGURE: BARBERRY BUSHES & SEEDLINGS DESTROYED

SUMMARY ACCOMPLISHMENTS ALL STATES WESTERN REGION

PROPERTIES CLEARED — — — — 15,384

BUSHES & SEEDLINGS DESTROYED — — 76,506,815

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JULY 1960

GPO 980454

GRASSHOPPER CONTROL

The last widespread, severe infestations of grasshoppers in this Region occurred in 1958. Cooperative rangeland control work was done on nearly 370,000 acres in fiscal year 1960. Of that acreage, over 230,000 were accomplished in Wyoming, principally in the first quarter. Fourth quarter work in two states amounted to 7,365 acres.

All operations entailed the use of spray, and results were very satisfactory. As a result of fall surveys and early spring 1960 planning meetings, control was anticipated on 537,000 acres. These infestations have not developed, and only 7,365 acres of that amount have been treated to date. Only a few thousand acres remain scheduled for treatment at this time.

The grasshopper situation will remain under close observation, and one of the classes of areas meriting the most careful scrutiny is the Conservation Reserve Lands. During the transition from farmed lands to sod, there is a period of time when weedy growth especially attractive to some migratory species provides desired habitat. At the present time signs of the development of any threatening migratory grasshopper infestations are not visible, other than the possibility that something might build up from certain Conservation Reserve Land situations.

GRASSHOPPER

Region	Prepared by
Western	Oakland Office

Period (Designate: Month, 1-15, 16-31, or 1-31)	Date prepared
FY 1960	July 1960

COUNTY OR LOCATION A	STATUS First of Period B	INFESTED ACRES* State & Private C	INFESTED ACRES* Public Domain** D	INFESTED ACRES* Total Acreage E	ACRES SCHEDULED FOR TREATMENT F	ACREAGE TREATED State & Private G	ACREAGE TREATED Public Domain** H	ACREAGE TREATED Total Acres I	STATUS End of Period J
Arizona	24,300	7,000	17,300	24,300	0	0	0	0	24,300
California	4,313,200	4,063,840	249,360	4,313,200	9,205	0	7,243	7,243	4,308,260
Colorado	990,000	866,500	123,500	990,000	0	0	0	0	990,000
Idaho	255,010	61,200	193,810	255,010	97,000	0	0	0	255,010
Montana	1,049,000	718,500	330,500	1,049,000	0	1,200	38,834	40,034	1,049,000
Nevada	14,200	4,200	10,000	14,200	0	0	0 500	500	14,200
New Mexico	736,000	713,800	22,200	736,000	0	0	0	0	736,000
Oregon	10,000	+15,000	+55,000	70,000	0	0	0	0	70,000
Utah	0	0	0	0	0	0	89,104	89,104	0
Washington	10,000	+150,000	0	150,000	0	0	0		150,000
Wyoming	420,500	-67,400*	-3,500*	70,900	3,000	201,245	31,424	232,669	68,475
Columns C, D, E, F and J reflect status at end of FY 1960									
Total This Period	7,822,210	6,667,440	1,005,170	7,672,610	109,205	-	-	-	7,665,245
Total From July 1						202,445	167,105	369,550	

*Any minus figure must be explained.

**Identify ownership by Agency, i.e., BLM, Forest Service, etc.

PPC 7-6
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

GRASSHOPPER

Region	Prepared by
Western	Oakland Office

Period *(Designate: Month, 1-15, 16-31, or 1-31)*	Date prepared
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California	4,313,200	4,063,840	249,360	4,313,200	9,205	0	7,243	7,243	4,308,260
Colorado	990,000	866,500	123,500	990,000	0	0	0	0	990,000
Idaho	255,010	61,200	193,810	255,010	97,000	0	0	0	255,010
Montana	1,049,000	718,500	330,500	1,049,000	0	1,200	38,834	40,034	1,049,000
Nevada	14,200	4,200	10,000	14,200	0	0	0 500	500	14,200
New Mexico	736,000	713,800	22,200	736,000	0	0	0	0	736,000
Oregon	10,000	+15,000	+55,000	70,000	0	0	0	0	70,000
Utah	0	0	0	0	0	0	89,104	89,104	0
Washington	10,000	+150,000	0	150,000	0	0	0		150,000
Wyoming	420,500	-67,400*	-3,500*	70,900	3,000	201,245	31,424	232,669	68,475
Columns C, D, E, F and J reflect status at end of FY 1960									
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PPC 7-6
(Feb.-58)

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Plant Pest Control Division

GRASSHOPPER CONTROL — RANGELAND

LOCATION AND SIZE OF AREAS COOPERATIVELY TREATED FISCAL YEAR 1960

TREATED AREAS ARE SHOWN DIAGRAMATICALLY AND NOT TO SCALE BECAUSE OF SMALL NUMBER OF ACRES INVOLVED IN SOME COUNTIES. ACTUAL TREATED ACREAGES ARE SHOWN ON LEGENDS.

TOTAL ACRES TREATED - 369,550

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

JUNE 30, 1960

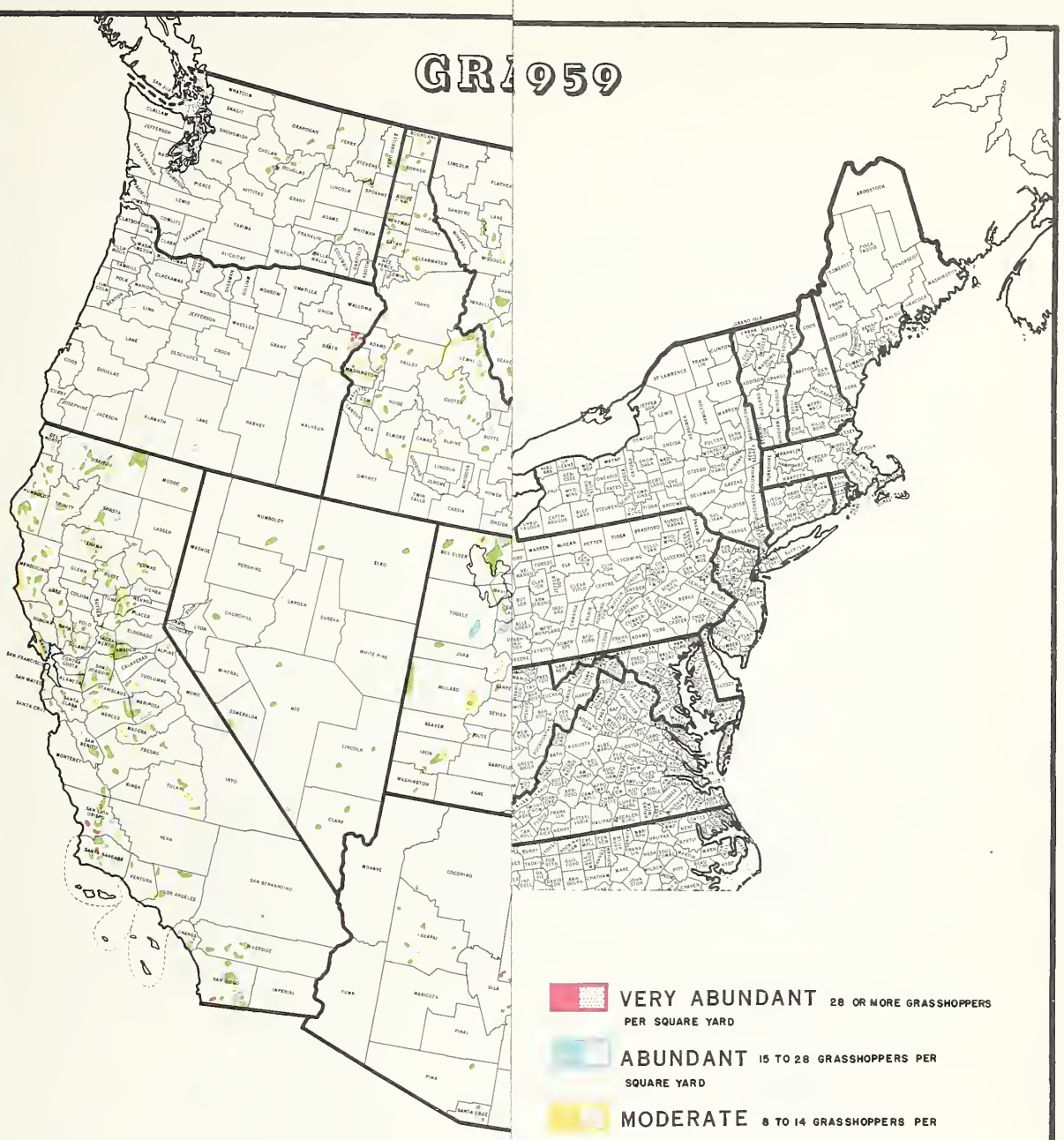
Grasshopper Control

WORK REPORT
1959 ADULT GRASSHOPPER SURVEY

Fiscal Year 1960

State	No. of Counties Surveyed	Total No. of Stops	Miles Traveled on Survey	No. of Men		Man Days		Time Period		Cost	
				PPCD	State & Co.	PPCD	State & Co.	Start	Stop	PPCD	State & Co.
Arizona	8	203	5,832	8	0	47	0	6/8/59	9/29/59	$ 411	$ 0
California	57	808	18,495	6	53	98	178	6/15/59	9/8/59	3,846	6,413
Colorado	45	409	5,850	6	3	39	5	7/29/59	8/5/59	1,495	101
Idaho	44	461	22,644	8	0	148	0	7/27/59	9/3/59	1,279	0
Montana	54	713	21,221	6	0	165	0	8/3/59	9/4/59	1,027	0
Nevada	17	121	14,960	5	2	75	10	8/1/59	9/15/59	2,511	410
New Mexico	31	419	22,593	5	1	129	15	7/16/59	9/10/59	2,165	80
Oregon	30	118	5,291	2	1	26	3	7/27/59	9/30/59	363	150
Utah	29	219	9,735	3	0	67	0	8/11/59	8/30/59	607	0
Washington	20	108	4,444	2	0	0	0	8/11/59	9/3/59	346	0
Wyoming	23	257	13,160	4	4	28	29	7/21/59	8/30/59	349	285
Total	358	3,836	144,225	55	64	822	240			14,399	$7,439

GRA 1959



VERY ABUNDANT 28 OR MORE GRASSHOPPERS PER SQUARE YARD

ABUNDANT 15 TO 28 GRASSHOPPERS PER SQUARE YARD

MODERATE 8 TO 14 GRASSHOPPERS PER SQUARE YARD

LIGHT 3 TO 7 GRASSHOPPERS PER SQUARE YARD

SOLID COLORS - RANGELAND INFESTATIONS

STIPPLED COLORS - CROPLAND INFESTATIONS

NECESSITY FOR CONTROL ON CROP OR RANGELAND NEXT SEASON WILL DEPEND UPON TYPE OF HABITAT, SPECIES PRESENT, WEATHER, AND CONDITION OF VEGETATION.

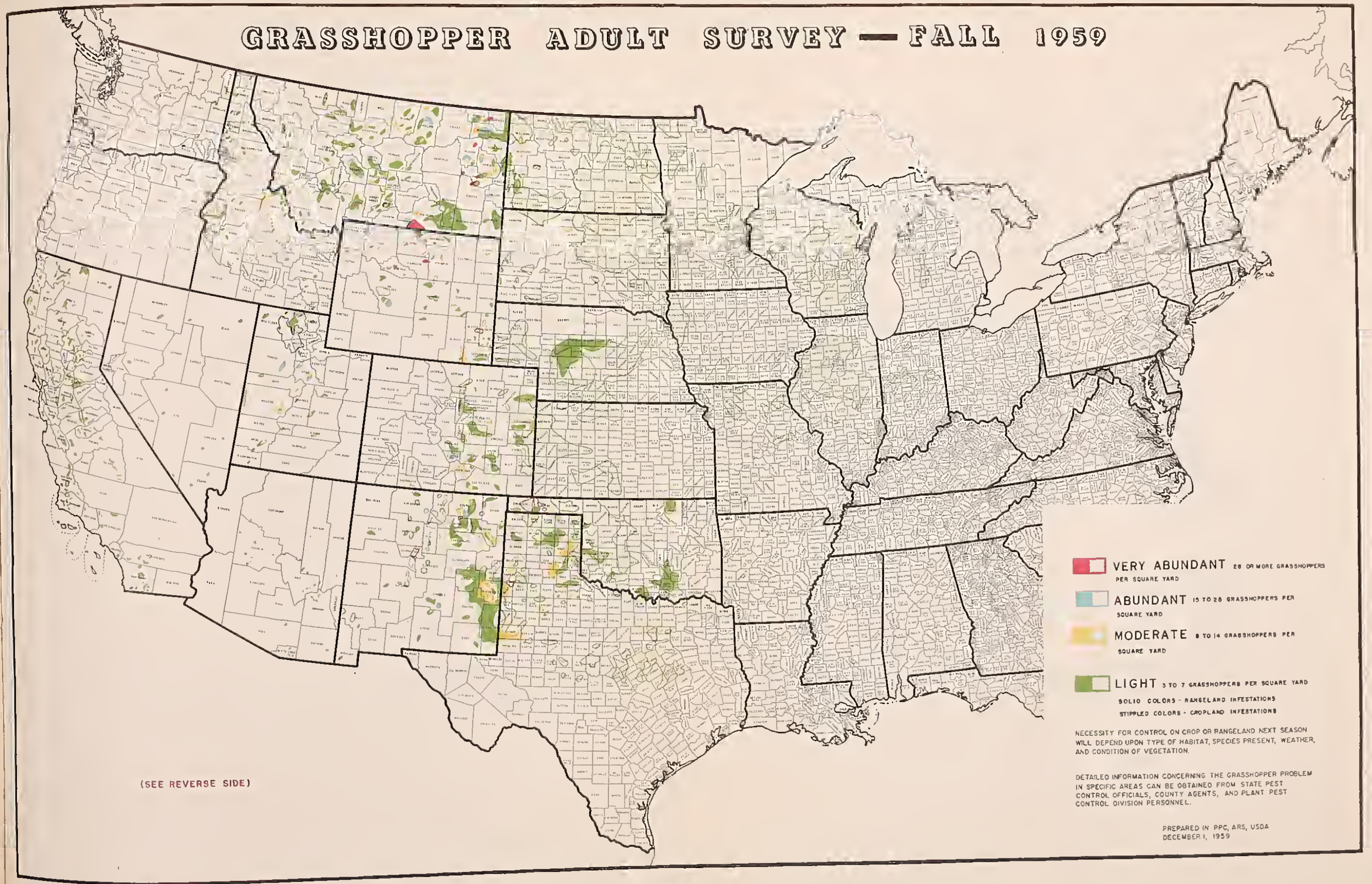
DETAILED INFORMATION CONCERNING THE GRASSHOPPER PROBLEM IN SPECIFIC AREAS CAN BE OBTAINED FROM STATE PEST CONTROL OFFICIALS, COUNTY AGENTS, AND PLANT PEST CONTROL DIVISION PERSONNEL.

(SEE REVERSE SIDE)

PREPARED IN PPC, ARS, USDA
DECEMBER 1, 1959

GPO 979285

GRASSHOPPER ADULT SURVEY — FALL 1959



(SEE REVERSE SIDE)

GPO 979285

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

TO COOPERATORS

This map is based upon the results of cooperative grasshopper adult surveys made during the late summer and fall of 1959. The survey reveals where and how many grasshoppers infest an area, and indicates the potential severity of infestations for 1960. Nymphal surveys, made in the spring, determine population densities, and indicate those areas where control may be necessary in 1960.

The infestations on croplands, shown on the map in stippling, in general are slightly lower than that which was indicated in 1959. Control on those lands will be handled by the farmers with technical assistance from Division and State personnel. The infested range areas, shown on the map in solid colors (orange, blue and red), total 5,667,010 acres in 13 Western and Midwestern States. Shaded areas on the map are diagrammatic. Within these areas, infestations may be solid or spotted.

RANGELAND GRASSHOPPER INFESTATIONS — ACREAGE BY REGIONS, FALL 1959

(Moderate Populations or Above – Orange, Blue and Red)

REGION AND STATE	LANDOWNERSHIP – ACRES		TOTAL ACRES
	PRIVATE AND STATE	PUBLIC DOMAIN	
CENTRAL:			
No. Dakota	70, 200	21, 760	91, 960
So. Dakota	—	3, 000	3, 000
WESTERN:			
Arizona	7, 000	17, 300	24, 300
California	1, 191, 440	38, 000	1, 229, 440
Colorado	866, 500	123, 500	990, 000
Nevada	4, 200	10, 000	14, 200
Montana	718, 500	330, 500	1, 049, 000
New Mexico	713, 800	22, 200	736, 000
Oregon	—	10, 000	10, 000
Idaho	61, 200	193, 810	255, 010
Washington	10, 000	—	10, 000
Wyoming	316, 000	64, 500	380, 500
SOUTHERN:			
Texas	873, 600	—	873, 600

The survey was planned and performed by the Plant Pest Control Division, Agricultural Research Service, in cooperation with various State agencies concerned.

December, 1959

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TIONS — ACREAGE BY REGIONS, FALL 1959

Above – Orange, Blue and Red)

REGION AND STATE	LANDOWNERSHIP – ACRES		TOTAL ACRES
	PRIVATE AND STATE	PUBLIC DOMAIN	
Montana	718, 500	330, 500	1, 049, 000
New Mexico	713, 800	22, 200	736, 000
Oregon	—	10, 000	10, 000
Idaho	61, 200	193, 810	255, 010
Washington	10, 000	—	10, 000
Wyoming	316, 000	64, 500	380, 500
SOUTHERN:			
Texas	873, 600	—	873, 600

l Research Service, in cooperation with various State agencies concerned.

ıber, 1959

HALL SCALE ERADICATION

Hall scale is believed to have been eradicated from California. There remain, however, many outlying host plantings which have not yet been inspected, but where the pest could be established. To prevent the possibility of an undiscovered infestation from going unattended, a greatly reduced inspection program was conducted in the previously-known infested counties during fiscal year 1960. No new infestations were found as a result of these inspections, nor were there any indications of a recurrence of the pest in plantings which had been found infested and which were subsequently treated.

As a precautionary measure, plans have been made to continue the same type of inspection in fiscal year 1961. The California State Department of Agriculture will assist in this work on the same basis as during previous years.

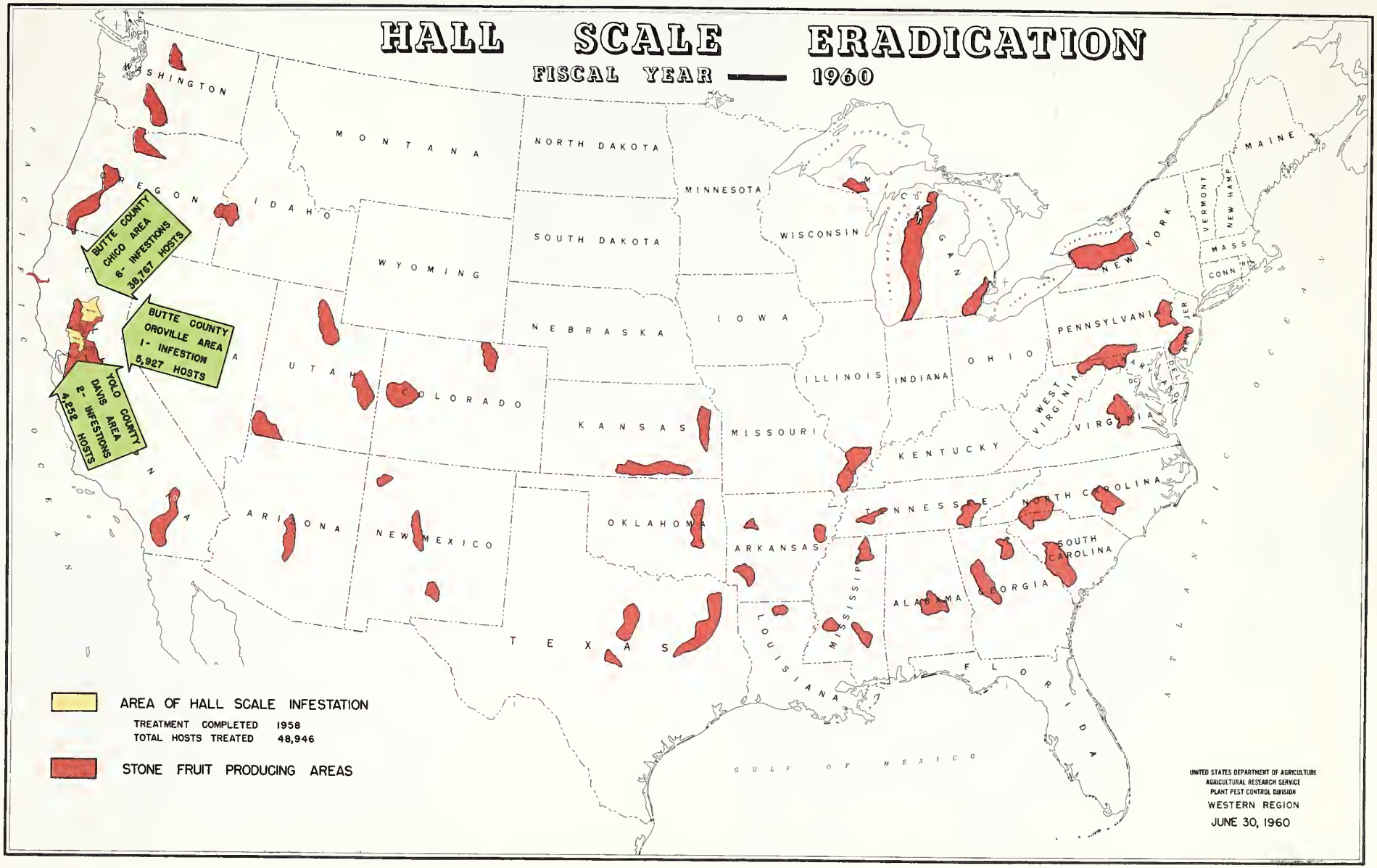
SUMMARY

HALL SCALE

State: California

Fiscal Year 1960

Area	City Blocks	Number Properties	Hosts Inspected	Hosts Infested	Hosts Removed	Trees Fumigated
Infestation Area						
Butte County						
Oroville City	11	45	95			
Rath Area		61	17,275			
U. S. Plant Introduction Gardens		1	7			
Yolo County						
Davis		3	77			
Outlying Districts						
Butte County						
Paradise		1,280	16,606			
Totals	11	1,390	34,060			
Cumulative totals since beginning of program	4,676	44,554	1,080,804	2,960	17,784	48,946


HALL SCALE ERADICATION
FISCAL YEAR — 1960
BUTTE COUNTY
CHICO AREA
6- INFESTIONS
38,767 HOSTS
BUTTE COUNTY
OROVILLE AREA
1- INFESTION
5,927 HOSTS
YOLO COUNTY
DAVIS AREA
2- INFESTIONS
4,252 HOSTS
WASHINGTON
OREGON
IDAHO
MONTANA
WYOMING
NORTH DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
NEBRASKA
UTAH
COLORADO
KANSAS
MISSOURI
ILLINOIS
INDIANA
OHIO
KENTUCKY
WEST VIRGINIA
VIRGINIA
PENNSYLVANIA
NEW YORK
VERMONT
NEW HAMP.
MAINE
MASS.
CONN.
NEW JERSEY
DELAWARE
MARYLAND
NORTH CAROLINA
TENNESSEE
SOUTH CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
LOUISIANA
ARKANSAS
OKLAHOMA
TEXAS
NEW MEXICO
ARIZONA
NEVADA
CALIFORNIA
FLORIDA
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
AREA OF HALL SCALE INFESTATION
TREATMENT COMPLETED 1958
TOTAL HOSTS TREATED 48,946
STONE FRUIT PRODUCING AREAS
UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JUNE 30, 1960

GPO 980236

The products of program INGENUITY
Result: HALL SCALE ERADICATION

Gas applicator in place for introduction of hydrocyanic acid.

Tent pullers constructed on surplus army personnel carriers pulling a tent over a tree to be fumigated.

Evacuating residual hydrocyanic acid gas from a tent at end of exposure period.

KHAPRA BEETLE ERADICATION

At the close of the fiscal year there were no known khapra beetle infestations in the Western Region.

Surveys for the pest were conducted throughout the Region with emphasis on most likely locations in the States of Arizona, California, and New Mexico, where the insect is known to occur. There were no infestations found in New Mexico during the period of this report.

For the fiscal year, 35,403 inspections were made in the 11 Western States, and 12,335 specimen collections were submitted for determination--resulting in finding 29 new and 2 reinfestations having a combined volume of 6,806,538 cubic feet. Property fumigations for the fiscal year totaled 42, of which there were 38 new and 4 retreatments, comprising a total volume of 7,701,102 cubic feet.

From the beginning of the program, property inspections have totaled 190,087; 60,253 specimen collections have been submitted; 602 new infested properties and 30 reinfestations have been found. Total volume treated, new and reinfestations, was 161,288,346 cubic feet. These fumigations required the use of 1,440,922 pounds of methyl bromide.

Survey, regulatory, and eradication treatment activities were planned and conducted as in previous years in cooperation with the State Departments of Agriculture.

There is a need for a better method of testing tarpaulins prior to fumigation of infested properties.

Tests are in progress with alternate fumigants and in the use of reduced amounts of methyl bromide. These planned research activities are being accelerated to match the mounting interest in residues and effects of treatment on seed viability.

The increasing number of khapra beetle interceptions at maritime ports is a credit to the Quarantine personnel who make them, as well as a measure of the pressure of invasion by this pest. We share the grave concern the problem presents.

Khapra Beetle

INSPECTION SUMMARY

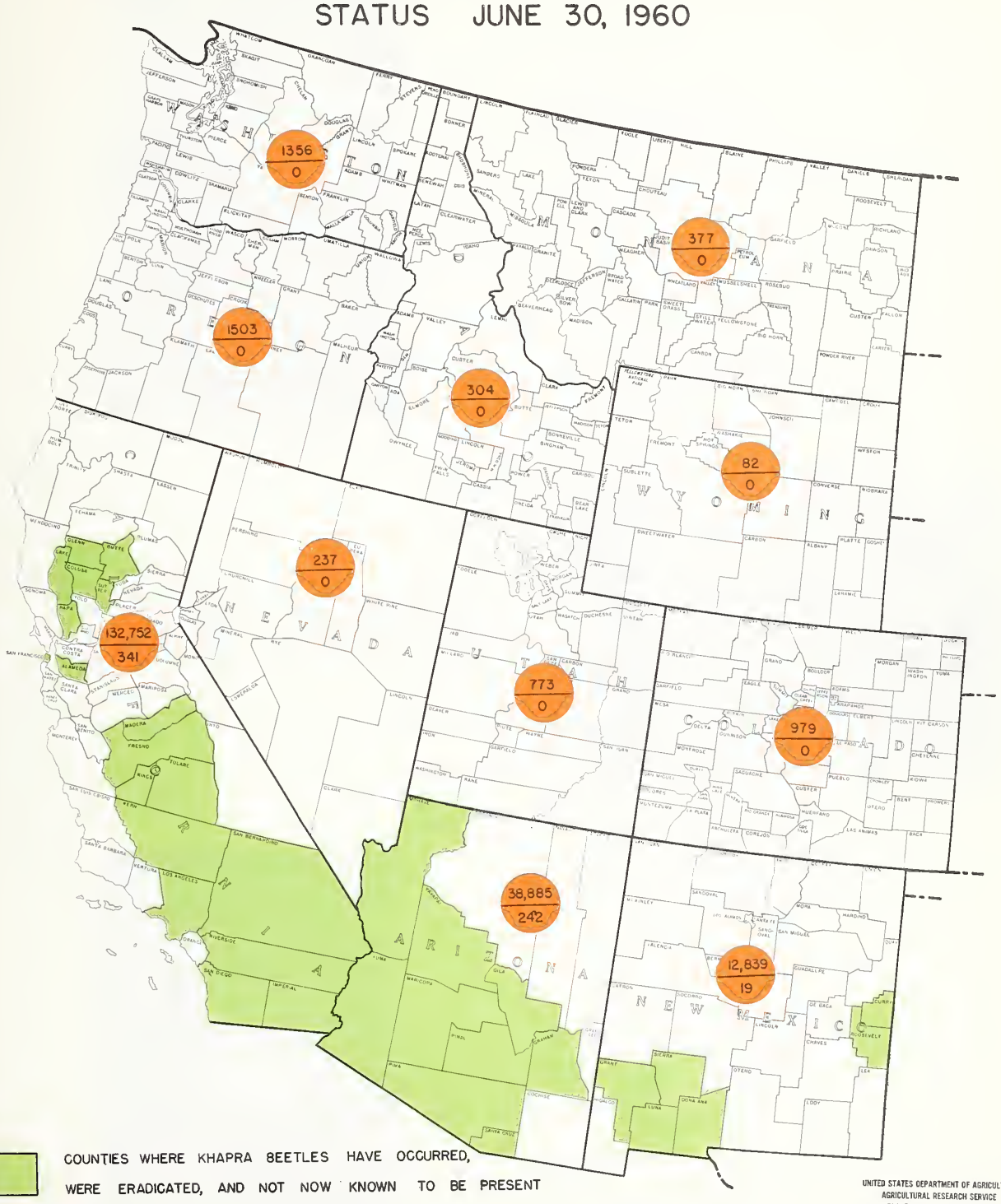
Fiscal Year 1960

STATE	Inspections			Specimen Coll. Submitted for Ident.	Inf. Sites from July 1	Sites Inf. from Begin.	Sites to be Treated	Est. of Vol Inf. from July 1 (cu. ft.)	Total Vol. Inf. from Beginning (est.cu.ft.)	Total Vol. Inf. to be Treated (cu.ft.)
	Initial	Repeat	Total							
Arizona	3,774	6,758	10,532	2,492	23	242	0	4,987,047	60,264,848	0
California	1,399	17,975	19,374	8,840	6	341	0	1,228,191	82,092,195	0
Colorado	35	96	131	0	0	0	0	0	0	0
Idaho	19	21	40	9	0	0	0	0	0	-
Montana	188	16	204	14	0	0	0	0	0	0
Nevada	10	40	50	0	0	0	0	0	0	0
New Mexico	2,665	1,425	4,090	784	0	19		58,024	1,779,808	0
Oregon	70	298	368	41	0	0	0	0	0	0
Utah	1	140	141	11	0	0	0	0	0	0
Washington	25	376	401	56	0	0	0	0	0	0
Wyoming	68	4	72	16	0	0	0	0	0	0
Total From July 1	8,254	27,149	35,403	12,263	29	XX	0	6,273,262	XXX	0
From Beginning of Program	80,425	109,662	190,087	60,271	XX	602	0	XX	144,136,851	0

Reinfested sites and volume not included

KHAPRA BEETLE ERADICATION

STATUS JUNE 30, 1960



COUNTIES WHERE KHAPRA BEETLES HAVE OCCURRED, WERE ERADICATED, AND NOT NOW KNOWN TO BE PRESENT

0 UPPER FIGURE: TOTAL INITIAL AND REPEAT INSPECTIONS
0 LOWER FIGURE: TOTAL INFESTED PROPERTIES FOUND.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JULY 1960

GPO 980455

Leave no "STONE" unturned in looking for KHAPRA BEETLE

Examining grain storage bulkhead supports.

Khapra beetle are often found in grain debris in concrete cracks and joints.

Concrete and wood construction joints offer good hiding places for khapra beetle.

MEXICAN FRUIT FLY CONTROL

A cooperative program to prevent entry of the Mexican fruit fly into the Western Region was continued in Arizona and California during fiscal year 1960. The work is cooperatively performed by the Division with Arizona, California, and the County Departments of Agriculture of Imperial and San Diego Counties, California.

This successful prevention program emphasizes surveys, accomplished by trap operation and grove inspection in San Diego County, adjacent to the California-Mexico Border, and by an area-wide host-spraying treatment. This latter activity is seasonal and is financed jointly by State of California and the Division.

The Mexican fruit fly continues to present a hazard to the fruit industry of Arizona and California. The present program appears to be a satisfactory answer to the question of how to prevent the fly from becoming established in the Western Region.

MEXICAN FRUIT FLY SUMMARY

Fiscal Year 1960

State	Visual Inspection		Trapping					Host Plants Sprayed	Properties Sprayed
	Properties Inspected	Properties Infested	Properties Trapped	Traps in Use	Trap Servicings	Properties Infested	Flies Caught		
Arizona	0	0	37	173	3,547	0	0	0	0
California	35,221	0	1,133	3,126	124,812	0	0	(1) 181,065	35,524
Totals	35,221	0	1,170	3,299	128,359	0	0	181,065	35,524

(1) In addition 85,423 nonhost trees and 780 acres brush sprayed

Traps used to AMBUSH wary fruit flies

McPhail Trap - Liquid baits are placed between the lip of the invagination and the bowl sides. Corked spout served for emptying purposes. Used for Mexican fruit fly, olive fly, and others attracted to fermenting lures.

Steiner Trap - Has dental wick impregnated with lure, which may be methyl eugenol for oriental fruit fly; anisyl acetone for melon fly; or oil of angelica for Mediterranean fruit fly. Combinations of these chemicals are often used as multipurpose lures.

MORMON CRICKET CONTROL

Mormon cricket infestations in the Region on June 30, 1960, totaled approximately 27,000 acres. Since nearly all infestations are light, with only scattered solitary crickets present, very little of this acreage is scheduled for control this season. Control work during this fiscal year was limited to one small area in northcentral Oregon, where 1,200 acres were baited. During the first quarter, a number of crickets were controlled in Idaho in conjunction with a baiting operation to eliminate a much heavier grasshopper infestation. Elimination of spot infestations during the past several years has tended to hold these insects in check. It will not be definitely known how much control work will be necessary in the last quarter of fiscal year 1961 until this season's surveys are complete, but no significant increase is anticipated unless drouth conditions cause some change in the picture.

MORMON CRICKET ADULT SURVEY —— FALL 1959

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
NOVEMBER 1959

GPO 979257

MORMON CRICKET CONTROL — RANGELAND

LOCATION & SIZE OF AREAS COOPERATIVELY TREATED FISCAL YEAR 1960

TREATED AREAS ARE SHOWN DIAGRAMATICALLY AND NOT TO SCALE BECAUSE OF SMALL NUMBER OF ACRES INVOLVED IN SOME COUNTIES. ACTUAL TREATED ACREAGES ARE SHOWN ON LEGENDS.

TOTAL ACRES TREATED - 26,820

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JUNE 30, 1960

GPO 980354

PEACH MOSAIC DISEASE CONTROL

Peach mosaic disease incidence continues to be held at a very low level in the Western Region. This is a strong recommendation for the effectively conducted cooperative survey and the enforcement of control and regulatory measures. The cooperative peach mosaic program during the fiscal year 1960 was the most successful in the history of the program. A light infestation, 3 trees on 2 properties, was found for the first time in Montrose County, Colorado, in the fall of 1959. Peach mosaic was not found in Delta County, Colorado, or Los Angeles County, California, during the fiscal year 1960.

The commercial peach industry in the regulated area of Southern California now represents only 3 percent of the State's production. This industry, however small it may be, continues to require annual disease control measures. In the non-infected area where 97 percent of California peaches are grown, annual detection surveys are a low-cost means of insurance against widespread infection of peach mosaic and other virus diseases.

In an effort to extend the peach harvest period in Mesa County, Colorado, peach growers are planting new varieties which ripen earlier and later than do the J. H. Hale and Elberta varieties.

On regular orchard inspection for peach mosaic in Cherry Valley, Riverside County, California, 18 trees infected with yellow bud mosaic disease were found on one property. This is the first report of yellow bud mosaic in Riverside County.

During the peach mosaic vector-search training session in California, the vector, a microscopic mite Eriophyes insidiosus, was found in Ventura County, California. It had not been previously reported from that county. No vector was found during the survey in 21 additional California counties from Kern on the south to Tehama on the north.

Cooperative surveys and control programs were conducted in the States of Utah, Colorado, and California during the fiscal year 1960.

STATE INSPECTION SUMMARY

Peach Mosaic

Fiscal Year 1960

	Counties			Properties		Trees		
States	Number Inspected	No.Found Infected	No.Currently Infected	Number Inspected	Number Infected	Number Inspected	Number Infected	No. Infected Trees Removed
California	8	3	4	6,340	143	425,366	404	404
Colorado	3	2	4	1,461	188	853,004	562	562
Utah	1	1	1	168	6	14,118	10	10
Arizona	0	0	13	0	0	0	0	0
New Mexico	0	0	27	0	0	0	0	0
Totals	12	6	49	7,969	337	1,292,488	976	976

NURSERY INSPECTION - REGULATED AREAS

Peach Mosaic

Fiscal Year 1960

State	No. Counties Inspected with Nurseries	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspection			
				Properties		Trees	
				Inspected	Infected	Inspected	Infected
California	4	158	13,170	339	0	1,377	0
Colorado	1	1	1,500	13	0	5,580	0
Totals	5	159	14,670	352	0	6,957	0

NURSERY INSPECTION - OUTSIDE REGULATED AREAS

State	No. Counties Inspected with Nurseries	Number Nurseries Inspected	Number Nursery Trees Inspected	Environs Inspection			
				Properties		Trees	
				Inspected	Infected	Inspected	Infected
California	1	3	469,000	69	0	321	0
Totals	1	3	469,000	69	0	321	0

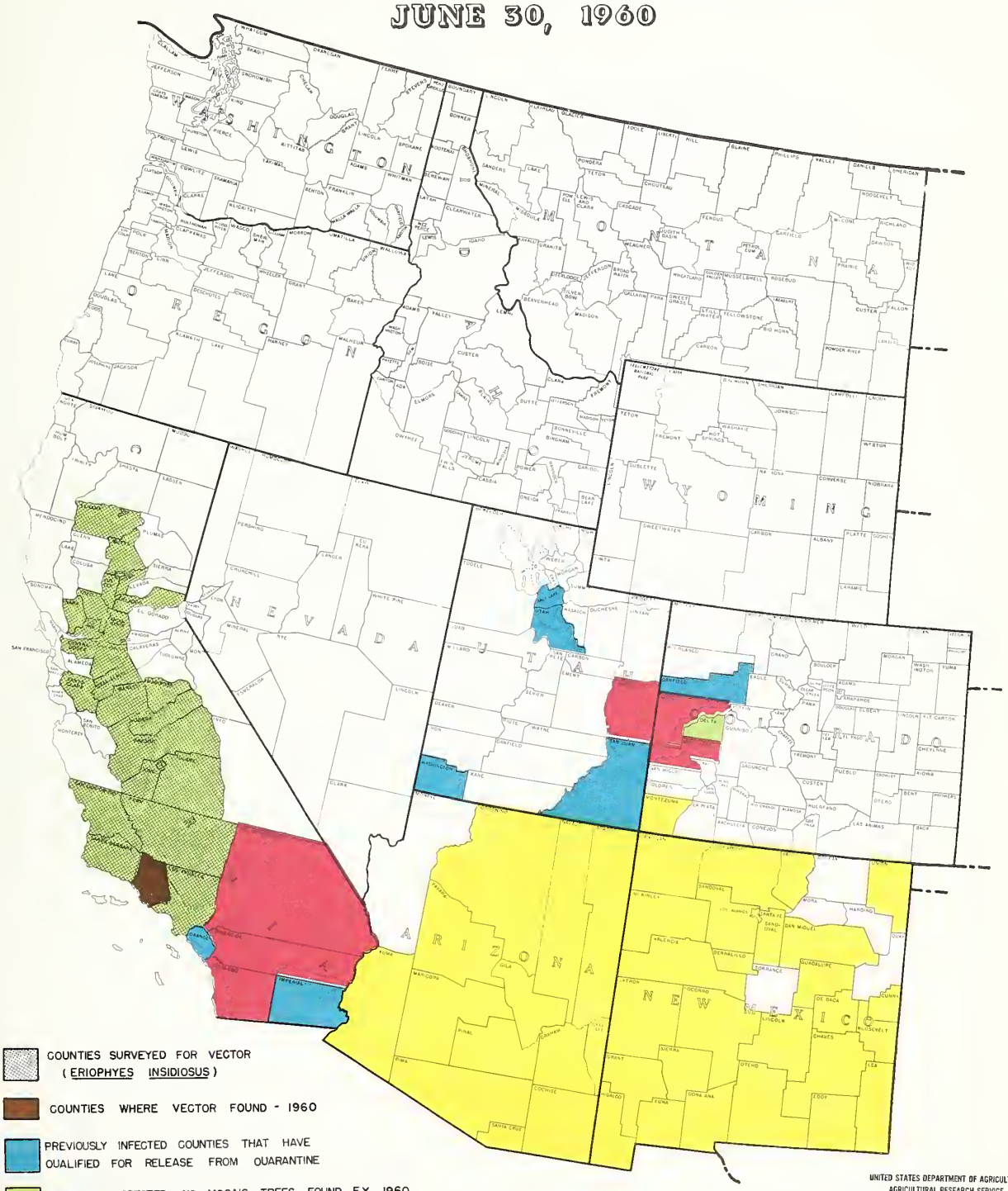
BUDWOOD SOURCES AND ENVIRONS INSPECTIONS
REGULATED AREAS

Peach Mosaic

Fiscal Year 1960

STATE	Number of Counties	Total Number of Budwood Sources Inspected	Total Number of Budwood Trees	Number of Budwood Sources with Mosaic in Budwood Block	Number of Mosaic Trees in Budwood Block	Environs Inspection				Mosaic trees Removed by May 15, 1960
						Properties		Trees		
						Total Number Inspected	Number Infected	Total Number Inspected	Number Infected	
California	2	2	191	0	0	77	0	280	0	0
Colorado	1	2	3141	0	0	13	0	5580	0	0
Totals	3	4	3332	0	0	90	0	5860	0	0

PEACH MOSAIC DISEASE CONTROL
JUNE 30, 1960



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JULY 1960

GPO 980482

PINK BOLLWORM CONTROL

In the Western Region cotton is grown on approximately 3,000 acres in Nevada, 400,000 acres in Arizona, 900,000 acres in California, and 185,000 acres in New Mexico.

The pink bollworm is known to occur in Arizona and New Mexico. All of the regulated area within the State of Arizona is designated as an eradication area; New Mexico is in the generally infested area.

An extensive cooperative eradication program is currently being conducted in the Counties of Maricopa, Pinal, Pima, and Santa Cruz in central Arizona.

Pink bollworm populations have gradually increased over the years in eastern Arizona and in a small area in the Rio Grande River Valley in New Mexico. This trend continued in these areas through the 1959 cotton growing season. Control work, principally cultural, was conducted voluntarily in New Mexico, while in eastern Arizona cultural practices were performed as a requirement of State regulation.

Intensity of survey was stepped up in Arizona, California, and Nevada. From April through November, 135 light traps were operated in Arizona, 145 in California, and 7 in Nevada. Sixteen gin trash machines were operated in Arizona and 8 in California. Bloom, boll, and lint cleaner inspections were increased in Arizona and continued at previous intensity elsewhere in the Region. The 1959 cotton crop surveys confirmed the infestation of 5,000 acres of cotton within the Arizona eradication area. Moth trap catches totaled 36 moths in the spring of 1960, versus 17 for the entire 1959 season, probably attributable to favorable winter and spring moisture conditions. In 1960, 35 of the 36 moths were caught prior to the appearance of susceptible host forms, while in 1959 only 4 were caught during a comparable period. A single moth catch near San Luis in Yuma County in early April 1960 has not been confirmed by any local field infestation, but did stimulate increased detection efforts in western Arizona, California, and western Mexico.

In July of 1959 the 7th and 8th applications of the 75,000-acre spring insecticide treatment program in central Arizona were completed. That program involved 575,000 cumulative acres. Surveys on the 1959 crop revealed infestations on 1,600 acres in sufficient time to treat 4,900 cumulative acres on a fall treatment program. The spring of 1960 treatment program, with six applications completed by June 30, was started on May 17 and involves 32,000 acres, 5,000 of which were proved infested. Three more applications will be made in July.

Very little of the acreage being treated this season was inside the treatment area of 1959. In most such cases there was a good possibility of reinfestation from small "hotspots" that lay outside the 1959 treatment area.

Federal and State quarantine enforcement continued in 1959-60 as did the mandatory cultural control program established in 1958 for eight quarantined counties by the Arizona Commission of Agriculture and Horticulture. This included stalk destruction and plow-under of crop residues and establishment of a delayed planting date. The 1960 plow-under date was set for January 20. Because of heavy rains in December and January, the deadline was re-established to February 20 and later to March 1. The 1960 planting date was set to begin April 1 in all quarantined counties. Production of stub cotton was prohibited in the State.

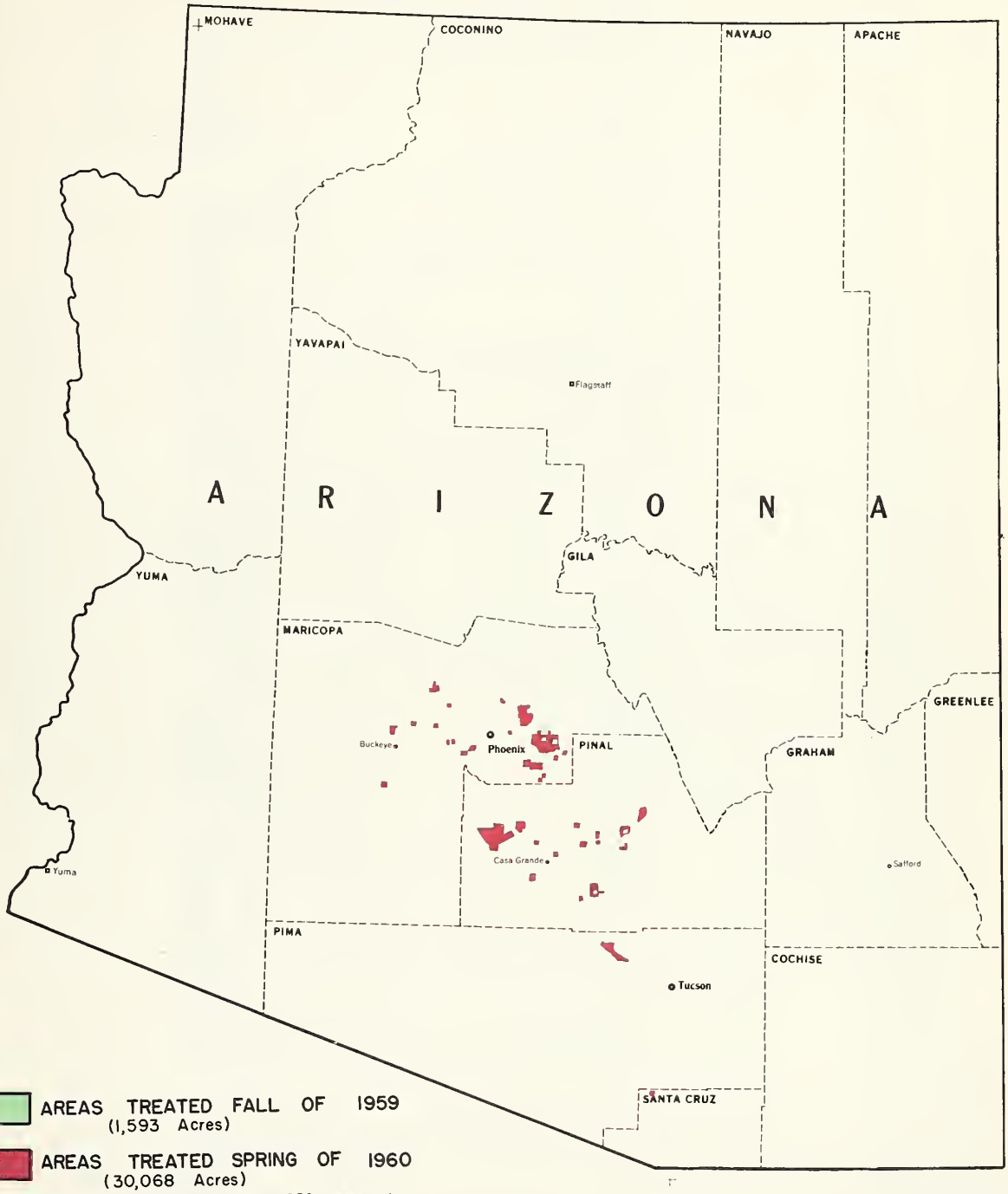
In New Mexico, enforcement of the Federal Quarantine involved the certification for movement outside the regulated area of 7,258 tons of treated commodities.

ARIZONA PBW INSECTICIDE PROGRAM

Location	When Treated	Field Acreage Treated			Cumulative Acreage Treated		
		Ground	Air	Total	Dusted	Sprayed	Total
Maricopa, Pinal	10/3-11/10/59	0	1,593	1,593	1,236	3,685	4,921
Maricopa, Pinal, Pima, Santa Cruz	5/17-6/30/60	1,067	30,594	31,661	12,196	175,659	187,855
Total		1,067	32,187	33,254	13,432	179,344	192,776

PINK BOLLWORM ERADICATION

FISCAL YEAR 1960



AREAS TREATED FALL OF 1959
(1,593 Acres)

AREAS TREATED SPRING OF 1960
(30,068 Acres)

NOTE- Areas treated fall 1959 were also included in the 1960 treatment program.
Total acres— 31,661

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
AUGUST 1960

GPO 980566

PINK BOLLWORM INSPECTIONS AND SURVEYS

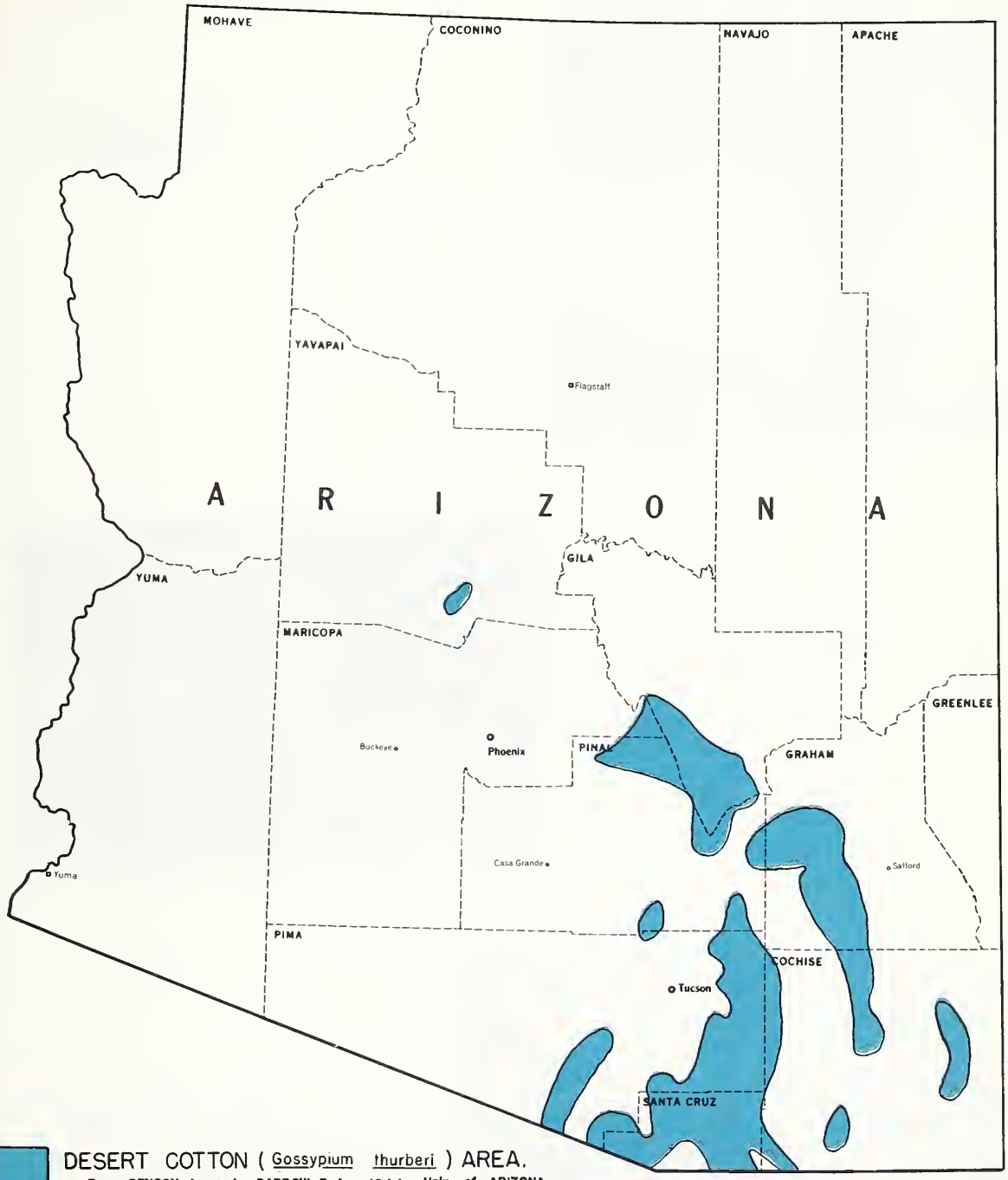
Pink Bollworm

Fiscal Year 1960

State	Gin Trash Number		Lint Cleaner Number		Bolls Number		Blooms Number		Light Traps			Inspected		Infested	
	Bu.	PBW	Insp.	PBW	Bolls	PBW	Blooms	PBW	Traps in Use	Trap Servicings	No. PBW Moths	Locs.	Acres	Locs.	Acres
Arizona	250,142	1,605	13,220	1,294	1,617,622	625	1,607,448	0	136	19,994	48	66,837a/	395,830b/	192c/	8,713
Calif.	43,543	0	8,503	0	482,086	0	5,237,497	0	139	17,741	0	2,535d/	198,498d/	0	0
Nevada	0	0	0	0	0	0	0	0	7	748	0	20d/	3,406d/	0	0
New Mex.	0	0	89	337	0	0	38,780	0	0	0	0	107c/	148,015c/	56	147,745
Total	293,685	1,605	21,812	1,631	2,099,708	625	6,883,725	0	282	38,483	48	69,499	745,749	248	156,458

a/ 50,071 locations within regulated area; 16,766 outside regulated area
b/ 361,020 acres within regulated area; 34,810 outside regulated area
c/ Within regulated area
d/ Outside regulated area

DESERT COTTON

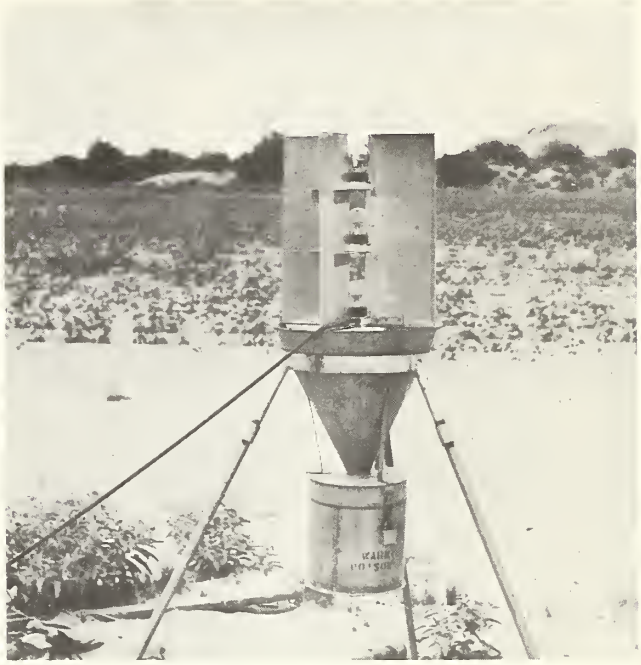


DESERT COTTON (Gossypium thurberi) AREA.
From BENSON, A. and DARROW, R. A., 1944. Univ. of ARIZONA BIOLOGICAL SCIENCE Bul. 6: PLATE 84.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OCTOBER 1959

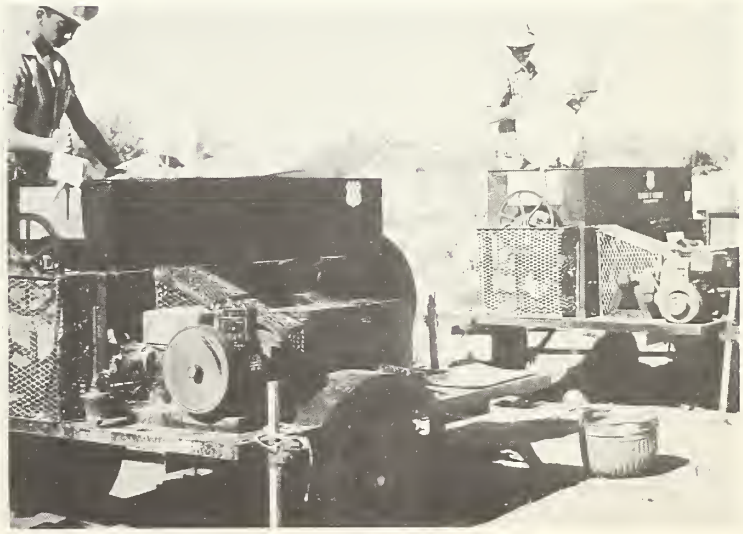
GPO 979175

Important "TOOLS" used in the search for PINK BOLLWORM



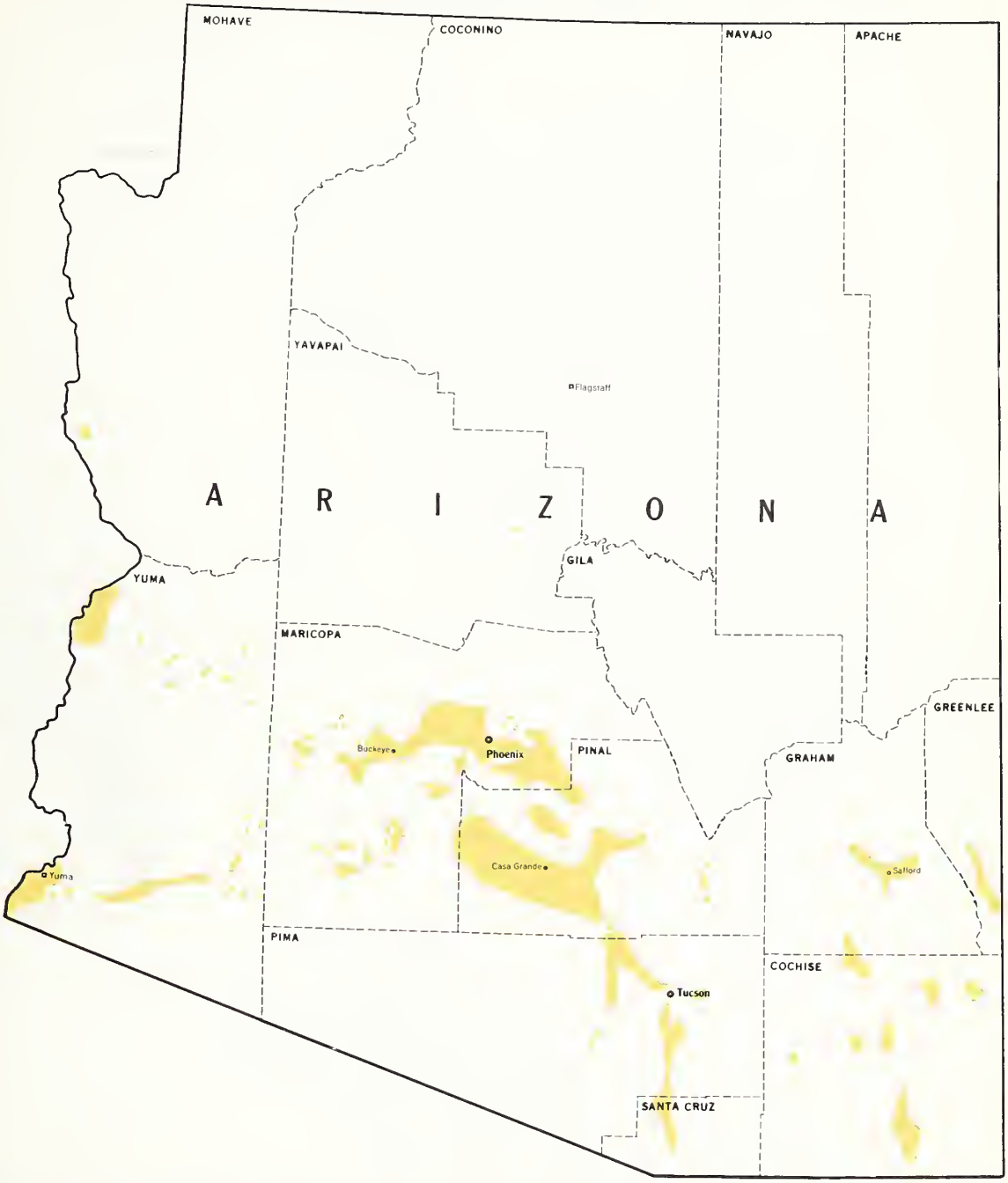
Portable Argon light trap placed at edge of field of young cotton to trap pink bollworm moths.

Examining cotton boll for presence of pink bollworm larvae.



Sampling gin trash for the presence of pink bollworm larvae.

COTTON GROWING AREAS

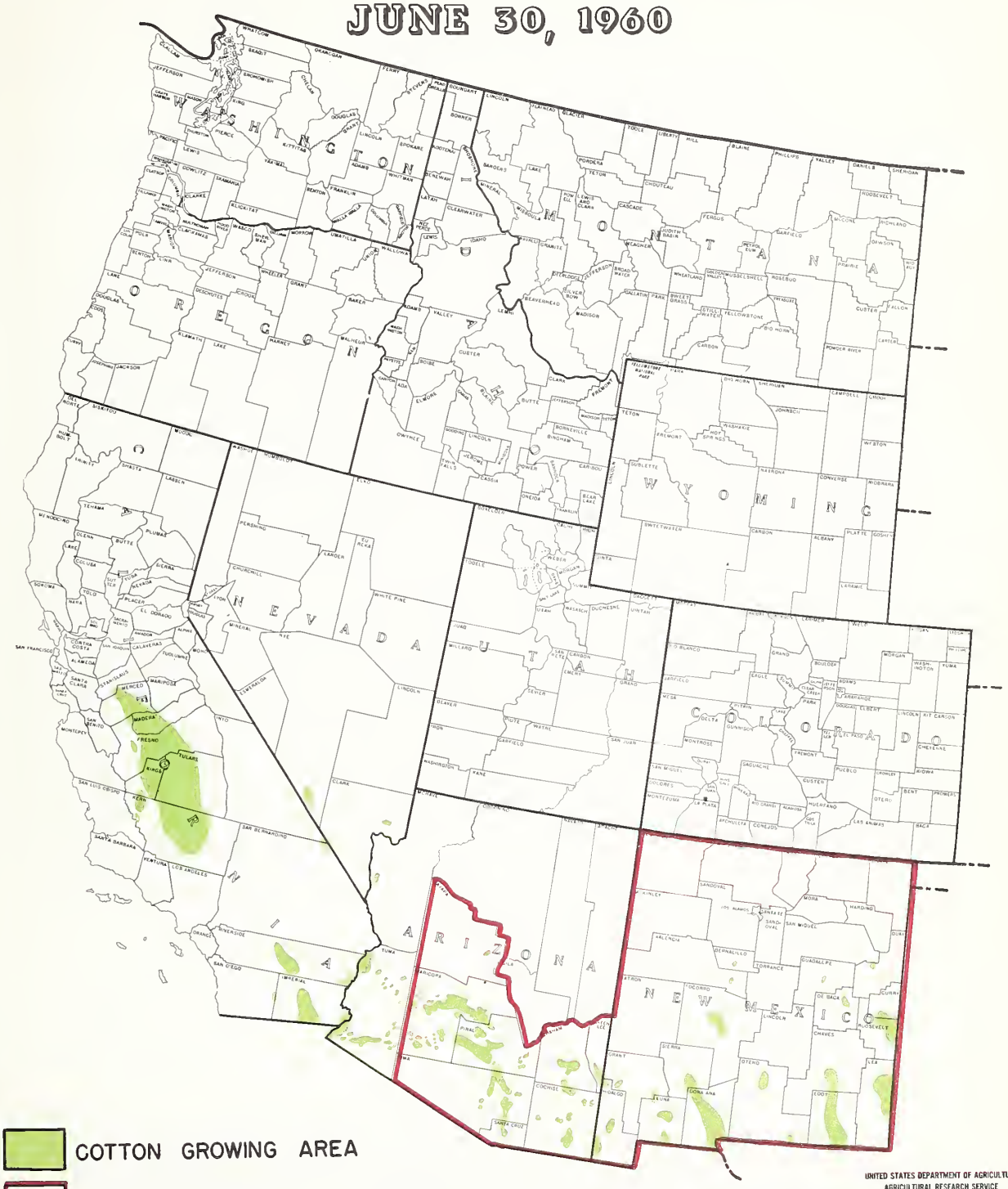


UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OAKLAND, CALIF.
MAY 1963

GPO 980234

PINK BOLLWORM CONTROL—ERADICATION

JUNE 30, 1960



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JULY 1960

GPO 980484

PLANT PEST SURVEY

Cooperative Economic Insect Survey

Six of the Western Region States have active cooperative survey agreements. The remaining five also submit insect occurrence reports. Interest in insect survey and detection continues to increase in all States, with many expanding or developing various aspects of this endeavor. The Detection Workshops held during March at three convenient locations in the Region to accommodate representatives from all States were very encouraging and worthwhile undertakings. A total of 225 persons attended the three meetings.

Beet Leafhopper (*Circulifer tenellus*)

Surveys for this pest were made during March in the spring beet leafhopper breeding areas of southern Utah and Nevada, southeastern California, southwestern Arizona, and eastern Colorado and New Mexico. Results of the surveys were summarized and released immediately to appropriate State agencies for use within States as they deemed necessary. In southern Idaho similar surveys were conducted on the predominantly Federally-owned land where beet leafhoppers overwinter as adults. Information obtained was used by local bean and beet growers to plan their control operations. Survey results were also used as a guide to control measures required on Federal lands to prevent movement of 'hoppers to nearby croplands.

Cooperative beet leafhopper surveys were also participated in by State agencies in Oregon and Washington.

Potato Psyllid (*Paratrioza cockerelli*)

Surveys were made in the potato psyllid spring breeding areas of New Mexico, Arizona, and California during March. Results of this survey were released immediately to those northerly States concerned. Overwintering populations were heavy in Arizona and California and light in New Mexico.

Japanese Beetle (*Popillia japonica*)

Japanese beetle traps were exposed at all major civilian and military airports in the Western States. Approximately 1400 traps were placed in use. No Japanese beetles were recovered in traps during the fiscal year.

Commercial and military aircraft coming from heavily-infested areas in the eastern United States and flying nonstop to Los Angeles, Oakland, San Francisco, Denver, and Seattle were inspected in July and August 1959, and again on an expanded basis in June 1960. During the fiscal year, 28 live(and 12 dead) beetles were recovered at Los Angeles, San Francisco, Seattle, and Denver.

Hoja Blanca (*Sogata orizicola*)

In cooperation with California State and County Departments of Agriculture, a symptom-vector survey for this pest was conducted in 15 counties during August and September 1959. Results were negative.

Sweetpotato White Fly (*Bemisia inconspicua*)

A limited detection and distribution survey was made for this pest late summer and fall of 1959 in New Mexico, Arizona, and California.

Alfombrilla (*Drymaria arenarioides*)

Alfombrilla is known to be present in an area 12 miles south of the International Border, near Antelope Wells, New Mexico. It is a very toxic plant which has caused extensive livestock losses in Mexico.

Beginning June 1, a 20-mile buffer zone north of the Mexican Border in Hidalgo and Luna Counties in New Mexico, and Santa Cruz and Cochise Counties in Arizona, was surveyed. Results were negative, although areas of high acid soil, particularly suitable for alfombrilla occurrence, were found by soil sampling and testing during the course of the survey.

Halogeton (*Halogeton glomeratus*)

Observations for occurrence and abundance of halogeton were continued in the Western States during the fiscal year. In some states where small areas supported the plant, equipment was lent to cooperators who desired to use it in limited treatment efforts toward suppression.

COOPERATIVE ECONOMIC INSECT SURVEY

JUNE 30, 1960

STATES WITH COOPERATIVE SURVEY AGREEMENTS

STATES WITH NO AGREEMENT

STATE CLEARING HOUSES

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
JUNE 30, 1960

GPO 980256

Survey Entomologists

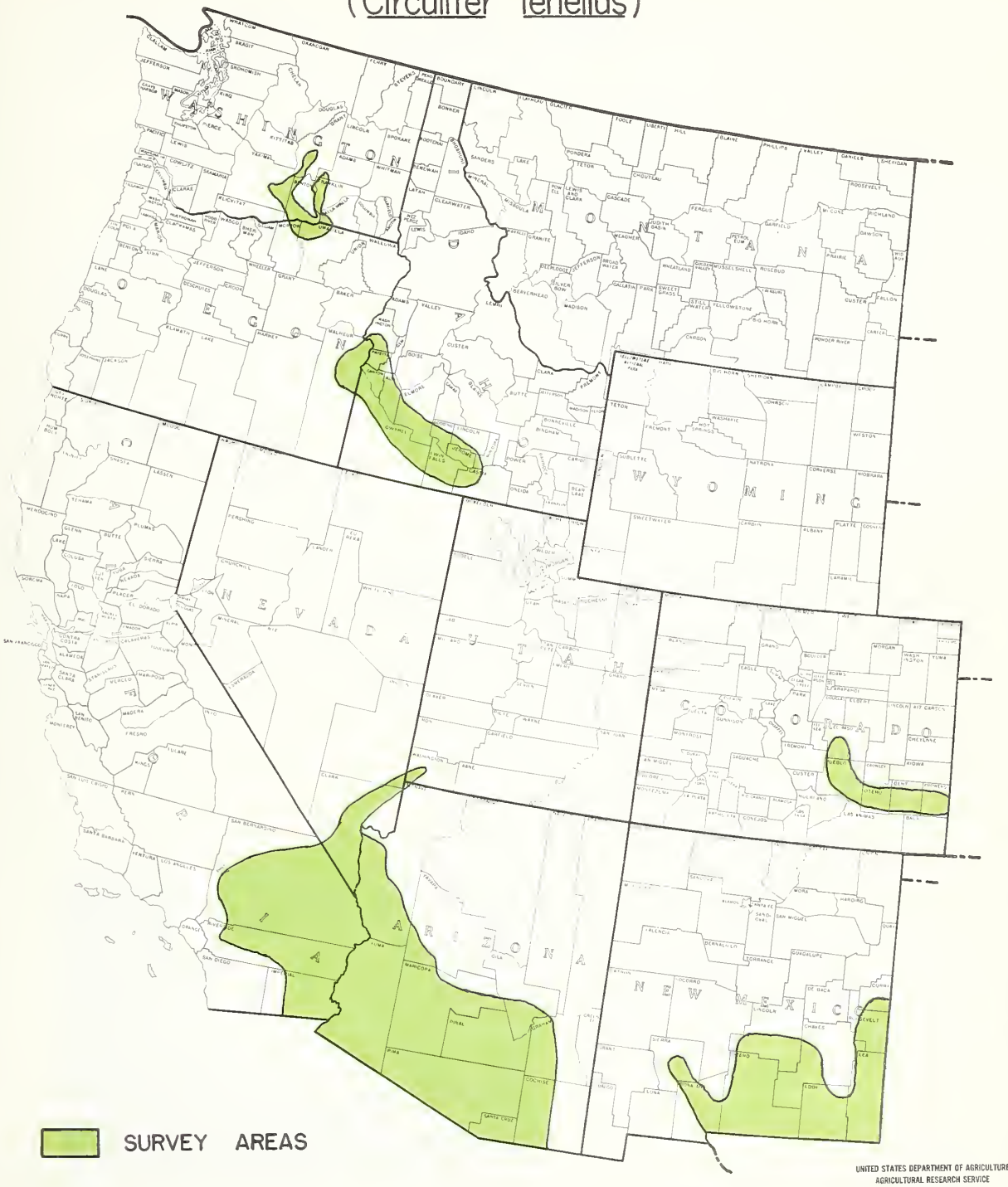
Arizona	Mr. Leon Moore Arizona Commission of Agriculture and Horticulture	Phoenix
California	Mr. Ronald Hawthorne State Department of Agriculture	Sacramento
Colorado	Mr. Leonard E. Jenkins Colorado State University	Ft. Collins
Nevada	Mr. Robert C. Bechtel State Department of Agriculture	Reno
Oregon	Mr. Joseph Capizzi State Department of Agriculture	Salem
Wyoming	Mr. Arlen D. Davison University of Wyoming	Laramie

State Clearing Offices For Economic Insect Survey Reports

Arizona	Dr. James N. Rooney, Extension Entomologist University of Arizona, Phoenix
California	Mr. Robert W. Harper, Chief, Bureau of Entomology State Department of Agriculture, Sacramento
Colorado	Dr. Leslie B. Daniels, Head, Department of Entomology, Colorado State University, Ft. Collins
Idaho	Dr. H. C. Manis, Head, Department of Entomology University of Idaho, Moscow
Montana	Dr. James H. Pepper, Head, Department of Zoology and Entomology, Montana State College, Bozeman
Nevada	Mr. Lee M. Burge, Director, Division of Plant Industry State Department of Agriculture, Reno
New Mexico	Mr. Dallas Rierson, Director, New Mexico Department of Agriculture, New Mexico State University, University Park
Oregon	Mr. Hugh Taylor, Chief, Division of Plant Industry State Department of Agriculture, Salem
Utah	Dr. George F. Knowlton, Extension Entomologist Utah State University, Logan
Washington	Dr. Horace S. Telford, Chairman, Department of Entomology, Washington State University, Pullman
Wyoming	Dr. Robert E. Pfadt, Head, Department of Entomology University of Wyoming, Laramie

BEET LEAFHOPPER SURVEY

(Circulifer tenellus)



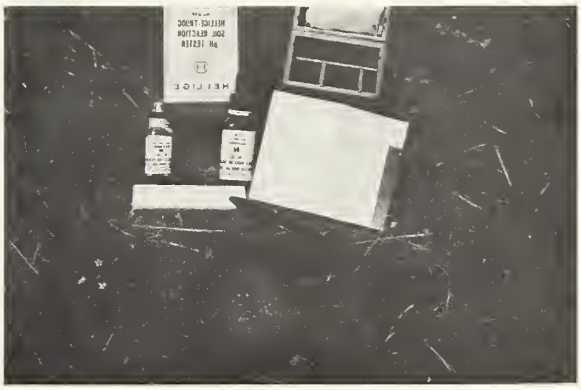
UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION

JULY 1960

GPO 980456

ALFOMBRILLA (Drymaria arenarioides H.B.K.) Family, Caryophyllaceae. The common name, derived from the word carpet, is somewhat descriptive of the fine-stemmed growth of the weed. Chemicals in the plant are very toxic to all livestock, except horses.

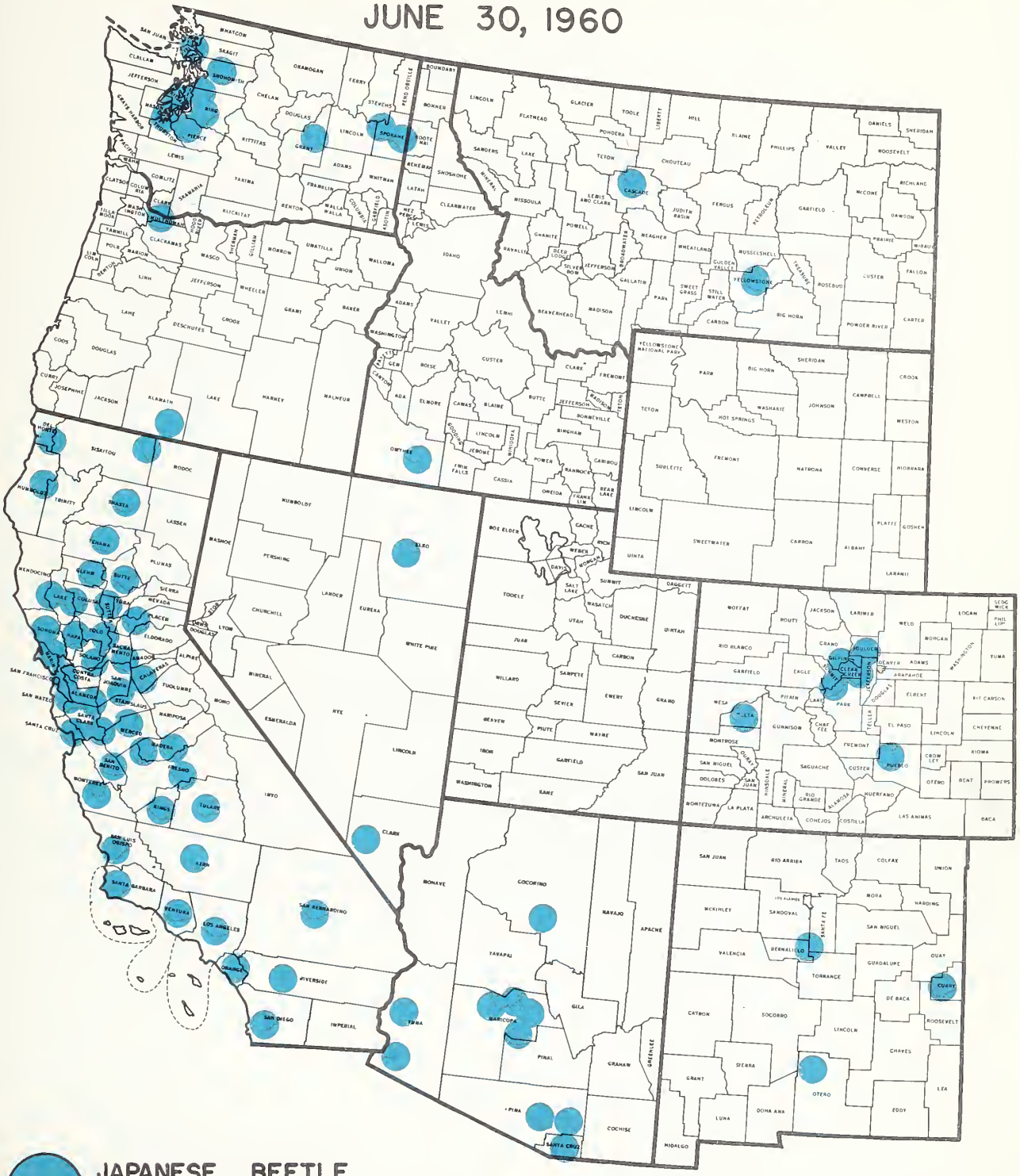
Alfombrilla is a bushy, recumbent plant--very fine stemmed, olive green in color. Leaves and sepals are covered with surface glands that make it sticky to the touch. It is a perennial, having tiny, white flowers with nine or ten petals and a yellow center.



Alfombrilla grows in acid soils. The Hellige kit is small, compact, economical, and efficient. It can be readily used under field conditions to determine soil pH.

JAPANESE BEETLE PROGRAM

JUNE 30, 1960



JAPANESE BEETLE TRAP LOCATIONS

TOTAL TRAPS EXPOSED--- 1619

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OAKLAND, CALIFORNIA
JULY 1960

GPO 980483

INSECT DETECTION — DO YOU HAVE A RESPONSIBILITY?

Insects, whether they be beneficial or detrimental, play a very important and vital part in the economy of our country and the world today. The insect menace is not so terrifying as it was decades ago, what with our new insecticides, modern methods of application, and research know-how, but it is costly and could be even more so if we do not recognize all aspects of the problem and work cooperatively to achieve solutions. We should not, as entomologists or persons working in the field of entomology, be complacent about what is probably one of the most important phases of modern entomology--Insect Detection--yet in this time of specialization, that may seem to be the tendency.

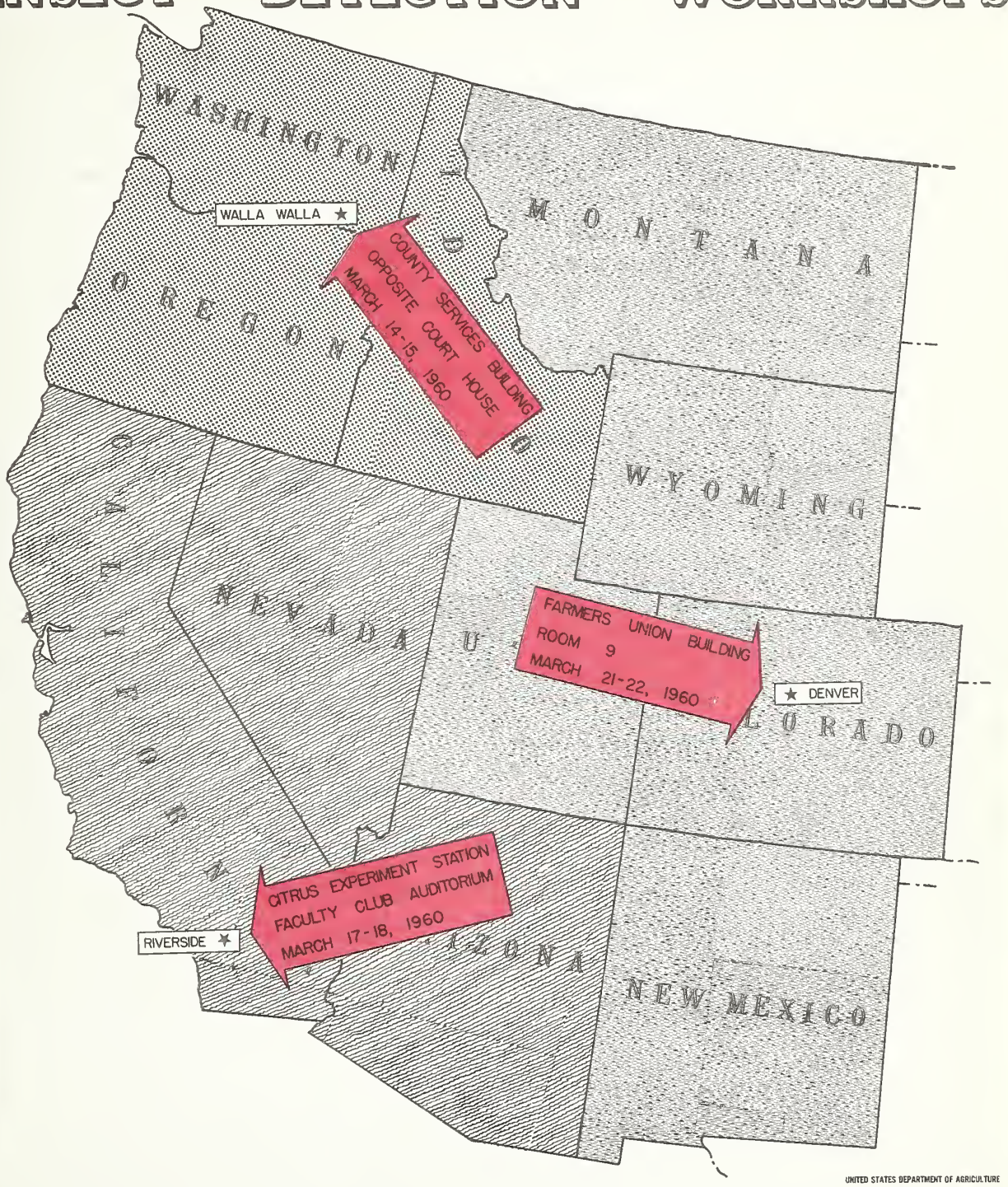
It is not economically feasible, nor is it necessary, to hire a staff sufficiently large to do all the work which would be needed to accomplish this very important job. If all workers in entomology could be made aware of the need for their alertness and how they can help, we feel the problem of detecting insects new to an area or the nation can be more easily and economically achieved.

Insect detection is a problem mutually important to all of us and certainly one in which we can assist effectively without impeding progress of our regular assigned duties.

All entomologists and qualified field workers are encouraged to participate with us in this Cooperative Insect Detection program. Research, Extension, College Staff, State and County Departments of Agriculture, Industry, and private entomologists--we invite you to attend the DETECTION WORKSHOP nearest you, as indicated on the attached map.

COOPERATIVE

INSECT DETECTION WORKSHOPS



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
OAKLAND, CALIF.
JANUARY 1960

GPO 979403